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THE
AMERICAN FARMER,

CONTAINING

ORIGINAL ESSAYS AND COMMUNICATIONS

ON

**AGRICULTURE, HORTICULTURE,
RURAL AND DOMESTIC ECONOMY,**

AND

INTERNAL IMPROVEMENTS,

WITH

ILLUSTRATIVE ENGRAVINGS AND THE PRICES OF COUNTRY PRODUCE.

*"O fortunatos nimium sua si bona norint
"Agricolos.".....*VIRGIL.

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AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

"O fortunatos nimium sua si bona norint
Agricolae."

Vol. XV.

BALTIMORE, MARCH 15, 1833.

No. 1.

THE FARMER.

BALTIMORE, FRIDAY, MARCH 15, 1833.

On presenting the first number of the fifteenth volume of the American Farmer to our subscribers, we would make a few remarks by way of introduction.—The American Farmer has now entered upon the fifteenth year of its existence. It was commenced when there was no other publication devoted to husbandry in the western world, nor any that gave the subject any thing more than a mere passing notice.—For some years it remained the solitary advocate of the agricultural interest, and was viewed by the mass of American cultivators with an askance eye on account of its obtruding its "*book farming*" upon the old routine of our fathers. Nevertheless, it found favor with some, and this continued to increase as its claims to attention became known, until it found its way into every state and territory in the union, and in some states into every county. From its commencement its good effects upon agriculture became visible, and at this time there is not a neighborhood east of the Allegany mountains that does not exhibit monuments to its honor in its improved husbandry.—We feel no delicacy in saying this, because the gentleman who established and conducted it then—and to whose spirited and patriotic genius our country is indebted for all it effected in the improvement of our husbandry—has long since retired from it, and left to other hands the completion of the grand design. As soon as the great advantage of such a journal became apparent, others were established, successively, in the east, in the south, in the north, and in the west, till at this time there is scarcely a state in the union that does not possess a paper chiefly if not exclusively devoted to agricultural affairs. As the American Farmer was from the beginning devoted to *American agriculture*, embracing all sections of our extensive country, and the interests of all in its range, it was of course neither southern, nor northern, nor eastern, nor western, in its designs or partialities. The effect, therefore, of the more local publications, has been to circumscribe the patronage of the American Farmer, as each successively became established, and we are now left with a list of subscribers barely sufficient to pay expenses. The object of these remarks is to solicit of our friends a little exertion on behalf of this publication, in the way of obtaining new subscribers. We feel assured that each present subscriber could easily obtain one new one—some more—and this would render our patronage an object of profitable concern, and also would extend the usefulness of the work. We beg our subscribers to think of this hint, and put it in practice.

STOCKING KNITTING MACHINE.—We have been very much pleased with a little machine for knitting stockings shown to us a day or two ago by Mr. John McMullen, of Birmingham, Huntingdon county, Pa. It occupies about a cubic foot, and is operated upon by turning a crank, which requires no more power or skill than a common hand organ, except when necessary to widen or narrow the stocking a stitch is dropped or added by hand. The machine does the work of six expert knitters, and is very simple. It is superior to the stocking loom, as that requires an apprenticeship to learn to work it, and is not calculated

for families. The present machine can be worked by any intelligent little girl, after a few minutes instruction, and is not costly—fifteen dollars, including the patent right. The machine we saw is best calculated for knitting wool, but we believe it can be readily adapted to cotton, silk, or linen, at pleasure. There are none of the machines for sale, the proprietor only wishing to sell patent rights, except in Pennsylvania. Any further information may be obtained from Mr. McMullen, whose address is given above.

☞ The letter from "*B.*" shall be attended to in our next.

THE COMPASS PLANT.

Mr. SMITH: *Nelson Co. (Ken.) Feb. 17, 1833.*

Inclosed, I send you a few of the seed of a plant, growing in the great prairies of the west. It is called the compass plant by some and by others the rosin weed. It is one of the most extraordinary plants in nature. The name of *compass plant* proceeds from the fact of its leaves, which are very large, rising from the root to the height of from one to two feet, presenting their edges almost invariably to the north and south—and consequently their broadsides to the east and west. This circumstance renders this plant almost an unerring guide to the traveller in cloudy days, who may be caught in those large plains, where, to use an expression sometimes used in those regions, he is out of sight of land—that is of growing timber, whereby to direct his course.

Such is the great uniformity of surface in those extensive prairies, that the most skillful woodsman would be unable to steer his course in a cloudy day, but for the aid of this plant. And the fact of its being found (so far as I have heard) only in those places, where the polarity of its leaves, so to speak, renders it eminently useful to man, seems to present it as one of the strongest proofs of special providence that has been presented to my mind.

The name of *rosin weed*, proceeds from a gum which exudes from its stalk, and dries and hardens in the sun, resembling considerably in appearance, taste and smell, the rosin of the pine—but I should say more pleasant and aromatic. It is quite adhesive, and I was told had been used as a substitute for shoemakers' wax.

The root of this plant somewhat resembles the parsnip, both in size and appearance. When cut in the spring by the ploughshare in turning over the sod, that portion left in the ground, discharges very freely a gummy substance about the consistency of honey, having very much the taste and odor of the gum which exudes from the stalk. The stalk grows to the height of from four to six feet.

Whether something useful might not be extracted from these roots, is I think worthy of experiment. If so, it could be produced in the prairies to any extent. Whether it will grow out of the prairies, has not, so far as I know, been tried. I mean to try it myself this spring—and have supposed a few of the seed would be acceptable to you. They are of last year's growth, sent me by a friend last fall from Missouri.

Very respectfully, THOS. SPEED.

[REMARKS.—From the above description we are entirely unable to identify the "*compass plant*" with any one known to us. The seed seem to belong to the natural order of compositæ, resembling those of

the dahlia somewhat. We should be glad, if any of our friends know the plant, for a more particular account of it.—*Ed. Am. Farmer.*]

THE PALM TREE.—This tree seems particularly intended by Providence for the uncivilized and destitute savage. It affords him a pleasant drink, and, indeed, the common and favorite drink, especially along the coast of Africa. The wine, as the juice is called, is obtained precisely as the juice of the maple is in America for a different purpose; a hole is bored in the trunk of a tree, a spout made of a leaf inserted, and through this the liquor flows into a calabash beneath, which, holding two or three gallons, will probably be filled during the day. It soon assumes a milky appearance, and is generally used in that state; if kept longer, it acquires rather a bitter flavor. The palm tree also afford a valuable oil, of which immense quantities have been heretofore taken off by foreigners, particularly by Liverpool traders. The palm wood is an excellent material in building the simple dwellings of the natives.

(From the Virginia Farmer.)

ROCK-MARL, FOUND IN PRINCE EDWARD.

We understand that Dr. Norton, of Prince Edward, has found upon his farm, an inexhaustible bed of rock-marl. This is certainly a very valuable acquisition to the farming interests of that county. We do sincerely hope that they may freely realize the best effects. From a conversation with a gentleman a few days ago, we doubt not, but that there is an abundance of it in Cumberland, and other counties in middle Virginia. How is this state blessed with mineral wealth? It appears that nature had anticipated her present impoverished situation, and put into her bosom a full restorative. We expect in a few days to receive a communication on this subject, which will, no doubt, be very interesting.

STARCHING.—Some of our female readers would, we presume, like to have us record some of the facts which we now and then pick up in conversation. If they wish to make a brother or a son look a little smart on some particular occasion, they must, after having boiled the starch, and while yet hot, stir a little tallow in with it, or, what is better, a small bit of sperm candle. The linen should be pretty wet when ironed, and the iron hot. Treated in this manner, starched apparel looks much better and keeps clean longer.—*N. F. Farmer.*

SINGULAR SAGACITY OF A PONY.—Mr. Jonathan Gain, of Lumps Farm, in this island, sold a pony of the Shetland breed, which he had had in his possession about seven years, to Mr. Wm. Padwick, of Hayling Island, who immediately took him home. On Mr. Gain going out of his house three mornings after, he found the pony at his gate, having made his escape from his new master, swam across Hayling harbor, and returned without leave or license to his old quarters. The animal whilst crossing the harbor was seen by the preventive men, who, mistaking his errand for a cask of spirits, immediately made after him, when to their astonishment the supposed cask on a sudden landed on the opposite shore, and galloped off without further molestation.—*Portsmouth paper.*

AGRICULTURE.

(From the Southern Agriculturist.)

ESSAY ON ROTATION OF CROPS;

By J. HAMILTON COUPER;

Read before the Union Agricultural Society.

[This excellent essay on the rotation of crops we obtained from Mr. Couper, during our late agricultural excursion into Georgia. It was not originally designed for publication, but having solicited, and obtained a copy, we now have the pleasure of presenting it to our readers. The subject is one of great importance to us, and ought to command the attention of every agriculturist. Circumstances prevented Mr. Couper from extending the essay as far as was originally intended, he has, however, promised us to resume the subject as soon as his leisure will permit.—*Ed. So. Agr.*]

The difference of effect produced on the fertility of the soil, by the spontaneous growth and by the artificial culture of plants, is so strikingly contrasted, as to present itself very forcibly to all observant minds. Where nature is allowed to sow her own seeds and to reap her own harvests, the earth, instead of being impoverished by her vegetable productions, seems at each new effort but to augment that fertility, which is ever presenting to the eye a varied aspect of beauty and fruitfulness. But very different has been the effect in most countries, where man has controlled the productions of the soil, and limited them to those alone which contribute to the gratification of his wants, conveniences and luxuries. Their exhaustion generally follows production, and utter impoverishment would succeed to teeming fertility, were not resort made to benign nature, or to expensive manures, to restore the lost fertility.

Is this contrast the necessary effect of the peculiar character of the plants which have been selected for cultivation? is it owing solely to cultivation; or has it arisen from a vicious system of agriculture, in relation to both? The continued and increasing fertility of some countries, where these plants are most extensively grown; and where cultivation is carried to the greatest perfection, proves that the impaired productiveness of the soil, is not necessarily the result of the two first causes, whatever may be their tendency; and that it is chiefly attributable to the effect of a vicious system.

The great error of this system has been, that man, instead of following the golden maxim of Lord Bacon, of conquering nature by obeying her laws, has endeavored, in opposition to those laws, to force her into a subservience to his own views. Had he observed the changes of vegetation which were spontaneously occurring around him, he would have perceived, that of the seeds of plants, which are scattered with a lavish hand over the earth, those to which the soil and climate were most congenial, and which found the greatest supply of food fitted to their support, obtained the mastery in the contest for existence; and continued to flourish, until having reduced or exhausted those principles of nourishment peculiar to themselves, they abandon the soil to others, to which it still afforded the elements of unimpaired luxuriance. These in their turn, having occupied it for a time, gave way to more successful rivals. Thus the earth, forever occupied by plants, to the growth of which it is best adapted, presents the greatest mass of vegetation, which, under existing circumstances, it is capable of bearing; and by their decayed remains and their ceaseless change, the exhaustion of any principle is soon restored, and the fertility of the soil is preserved unimpaired. Here the seeds of plants are abundantly thrown on the lap of the earth, and unerring nature selects those which it is best fitted to bear.

But such has not been the course pursued by man. Of the plants spontaneously produced by nature, he

has made a selection; and has wisely aimed at the extension of those best adapted to his use. But his want of skill has marred his own wishes. Ignorant of the principles of vegetation, he has consigned to the earth that which it was not fitted to bear; or if at first fitted, his avarice has induced him to continue the cultivation, until it was no longer so. The soil has been tortured to produce what it refused; and it has been refused that which it could produce. Man labored: the earth was impoverished; and scanty products were the precursors of others still more so.

Happily this gloomy result is not the necessary consequence of the cultivation of those plants, which minister most to the comforts of man. The progress of information, and the important discoveries of the laws of vegetation, which scientific research has made, during the last half century, have gradually led to a correction of vicious practices. And the establishment of sound principles in most of the departments of husbandry, now prove, that the cultivator may pursue an uninterrupted succession of useful crops, and at the same time maintain the soil in a state of unimpaired fertility.

This result is mainly attributable to the imitation of the principle of change, which constitutes the great and economical law of vegetable production: an imitation which has led to the most important practice of modern husbandry, the rotation of crops.

I have thought that I could not better fulfil the duty which has devolved upon me, by the appointment of this society to prepare an essay upon some subject connected with agriculture, than by attempting a succinct development of the principles upon which the rotation of crops is founded; to illustrate those principles by the practices of the most celebrated agricultural districts; and to suggest a few hints for a succession of crops for our own country. If in this discussion I am led beyond the legitimate bounds of an essay, I must throw myself on the indulgence of the society, who will, I trust, pardon the trespass on their time, in consideration of the extent and intricacy of the subject, and of its importance in reference to the peculiar deficiencies of our own agriculture.

The problem to be solved by the theory of a rotation of crops is, to ascertain by what combination or succession of crops, the soil may be kept in the highest state of improvement, and at the same time be made to yield the greatest net production, for a series of years.

The first object of the rational cultivator, will be to select the most valuable crops, which the peculiar circumstances of his climate, soil and situation admit of. He will further have reference to his own wants, and the demand which arises from markets.

But when he has ascertained the crops which, under these circumstances, are the most valuable, the soil may not be sufficiently enriched to produce them in the greatest abundance, or if sufficiently fertile, the crops may be of a nature so exhausting, as to have a tendency to impair it. He will, therefore, in order to maintain his land in the highest state of improvement, be under the necessity, either of adopting crops less exhausting; or of cultivating the exhausting crops less frequently; or of supporting the fertility of his soils by manures.

Where extraneous supplies of manures can be obtained, as from a vicinity to towns, mineral manures, marshes, irrigation, &c. a course of exhausting crops may be followed, without impairing the fertility of the soil; and the judicious cultivator will avail himself of these extraordinary means of enrichment. But as these favorable situations are comparatively few, and as the investigation of the question will be simplified, by omitting any allusion to them, it may be assumed as a general principle, that every soil, from its own productions, must be made to maintain its own fertility.

The successful application of this principle, depends upon a knowledge of the manner in which ve-

getables in general, tend to exhaust or enrich the soil; and of the nature more or less exhausting of each vegetable.

Plants do not, by the mere effect of their vegetation, impregnate the earth with any fertilizing principles. Their anchoring influence results entirely from the mechanical action on the soil; the beneficial operation of a peculiar mode of cultivation, during their growth; and the return to the earth of their decayed remains.

As all plants do, to a greater or less degree, subtract alimentary substances from the land in which they grow, were the whole of their vegetation removed from it, all plants would be impoverishing. Their enriching tendency, will depend upon the return to the soil, on their decay, of more of the principles of vegetation, than they have subtracted from it, during their growth.

Were all plants alike in their organization and vegetation, their comparative enriching effects would be in the relative proportion of their vegetation removed from the soil on which they grew, to that returned to it. And to the period of their growth at which it was removed. But this is not the case, for vegetables are found to differ essentially, in their exhausting effects, agreeably to their peculiar character, and to the particular mode of culture which they require.

The food of vegetables is found diffused through the soil; or floating in the atmosphere. And plants derive their nourishment, in part by their roots from the principles contained in the soil on which they are fixed; and in part by their leaves and succulent bark, from the atmosphere which surrounds them.

Vegetables having a system of large, succulent leaves, and much open and tender bark, absorb the greater part of their nourishment from the atmosphere. While those with firm and narrow leaves, and close and hard bark, derive their support chiefly from the soil.

It will be obvious from the enunciation of these principles that, by the cultivation of vegetables with a system of large leaves and tender bark, a greater mass of vegetation can be produced, with a given expenditure of the fertilizing principle of the soil, than by the growth of those with narrow leaves and compact bark, since a greater portion of the nutriment of the former is derived from the atmosphere.

It is further obvious that, as vegetables with a system of large leaves, draw much more of their food from the atmosphere than from the soil, if they be returned wholly, or in greater part, to the soil, it will receive more of the principles of fertility than it has lost; and that their tendency must be eminently enriching. On the contrary, as plants with a system of narrow leaves receive their nourishment principally from the soil, if the greater part of their product be removed from it, that which is restored to the earth is less than what has been taken from it, and their effect will be exhausting.

The different proportions, in which different vegetables derived their nourishment from the soil and atmosphere, is considerably influenced by the changes which they undergo in their organization during their growth. Before the period of flowering, a greater proportion of their nutriment is derived from the atmosphere. But the reverse takes place during the maturing of the seed. The proportion of food derived from the soil while the seeds are ripening, also depends much upon the peculiar character, and the changes which the other parts of the plant undergo at that time. The more oleaginous and farinaceous the seeds, and the greater their weight in comparison with the other parts of the vegetable, the greater is the proportion of nutritive principles furnished by the soil. This is still more increased when the leaves, bark, and other spongy parts of the plant, become dried up about the period of flowering, and the nourishment requisite to the perfecting of the seeds, is necessarily derived entirely through the roots, from the soil.

From the review of these principles of vegetable physiology, we arrive at the practical inference, that by the cultivation of crops with systems of large leaves, the soil is less exhausted, than if it be made to produce those with narrow leaves: that if the broad-leaved plants are cut before the period of flowering, they are still less exhausting, than if allowed to mature their seeds: and that if the product of their vegetation be returned wholly, or in greater part to the soil, they become eminently fertilizing. Hence they have been called ameliorating crops. On the contrary, as narrow-leaved crops are highly exhausting, the more particularly when they are allowed to mature their seeds; and these seeds and much of their other products are removed from the soil, they have been denominated exhausting crops. With a knowledge of these principles, and of the character of the plants which he cultivates, the agriculturist is enabled to maintain a proper degree of fertility in his soil. If his land be poor, he will cultivate more ameliorating and fewer exhausting crops, until it is sufficiently enriched. If sufficiently enriched, he will maintain it in that state by his ameliorating crops, which are a source of manure to restore to the soil, those principles of vegetation which have been subtracted from it by the exhausting crops. This is to be accomplished either, immediately, by plunging in the ameliorating crops; or mediately, by employing them as food for cattle, and applying the products of the farm yard in the form of manure.

This interchange of broad and narrow-leaved crops, constitutes one of the most important principles of a rotation of crops. Its application to practice is, however, to be modified by the circumstances which are about to be mentioned.

We have just seen that vegetables are separated into two classes, in reference to the organs by which they derive their food from the atmosphere. The same utility results from a classification with respect to those by which they take it up from the soil. Hence they have been divided into tap and tuberous, and fibrous rooted plants. The roots of the first class penetrate far into the earth, subtract their nourishment principally at a great depth, and divide the soil by their mechanical action. The latter extend themselves near the surface, draw their food from it, and tend to bind the soil. It results from the different action of these two systems of roots, that their interchange will be mutually advantageous; and that an economy of manure will be obtained by it, for when the surface of the soil becomes exhausted and unable to support the fibrous rooted crop, its substratum may still afford an abundant pasture to plants capable of reaching it, by their tap or tuberous roots.

But independently of the quality in vegetables of withdrawing more or less of their nourishment from the soil, in consequence of the peculiar structure of their leaves and roots, experience has proved that every plant has a habit of vegetation peculiar to itself, which by its action on the soil, after a certain period, renders it unfit to reproduce that particular vegetable, until a restoration has been effected of those peculiar principles of which it has been exhausted. Experience has also proved that, although a soil may be thus exhausted and unfit to produce one vegetable, it may be still in a state highly favorable to the growth of many others. These facts are firmly established by the change of plants which is incessantly renewing and beautifying the vegetable covering of the earth; by the alternation of the trees of our forests, so familiar to us all; by the succession of grasses on meadows; and by the daily observation of all practical agriculturists. But while the fact is confirmed beyond the possibility of doubt, it is to be regretted that this is one of the secrets of vegetation upon which scientific research has shed the least light. In lamenting the want of that clear perception of principles, which is so necessary to the direct and useful application of knowledge, it is, however, satisfactory, that enough has been established to prove that in the

interchange of plants of different habits of vegetation, there is a positive economy of the alimentary principles contained in the soil; and consequently that by it a greater product can be drawn from a given amount of manure, than by the continued culture of the same plant.

The effect of plants in exhausting the soil of those principles peculiarly adapted to their support, will obviously be greater the longer they have been cultivated. And in whatever way those principles are restored, it is evident that the time taken to accomplish it, will bear a ratio to that in which they have been exhausting. It is also evident that, if the recurrence of the same plant, on the same field, proves injurious, the succession of those approaching each other in character will also be so, to an extent, varying with their greater or less affinity.

From these views results one of the leading principles of a rotation of crops that, the return of the same vegetable, of the same field, or of vegetables approaching each other in character, should be removed as far as possible.

By a judicious succession of broad and narrow-leaved crops; of fibrous and tap-rooted plants; and by an interchange of vegetables of different characters, the cultivator will be able to adapt his crops to the actual state of the fertility of his soil; and at the same time, to maintain it in a progressive state of improvement.

But in obtaining this he has not accomplished all that is required. The order of his crops may be such, as not to admit of stirring the earth, and of drawing it up to the growing plant; operations which are absolutely necessary to the eradication of weeds; which permit the free admission into the soil of dew and heat, and of the gases, and finer particles of nourishment which constitute, or are found suspended in the atmosphere; and which while by a minute division of the soil they make it more absorbent of moisture, at the same time prepare it for the more ready escape of whatever is superfluous: operations, in fine, which contribute eminently to the luxuriance of the growing plant, and to the prosperity of subsequent crops; and which have been found to conduce essentially to the preservation of the fertility of the soil.

An attention to these points leads to a selection of such a rotation as will alternate crops which offer facilities in weeding and stirring the soil with others which do not: and to commence with a cleansing crop whenever the land is foul with weeds, or is likely to be made so, by the application of manures containing their seeds.

As some plants require a greater degree of fertility of soil to effect their full development than others; and as they require those principles of fertility to be in different states of preparation, and to a certain extent of different kinds, the cultivator will perceive the necessity of applying his manure to the most exhausting crop; and so to arrange the others, as that they may follow in the most favorable succession. Such a succession, as will prevent that useless expenditure of manure, which results from conveying, at one time, to the plant more than it can consume; and which must, therefore, in great part, be dissipated and lost in the atmosphere: or which takes place, when the manure is in such a state, that its fertilizing principles are brought into operation, at a period too early, or too late, to meet the exigencies of the growing plant.

Such are the principles of the convertible husbandry derived from the laws of vegetation. There are others founded on the economy of labor, of time, and of means.

The practical agriculturist will feel the necessity of making such an arrangement, that the labor of preparing the soil, and sowing, cultivating, harvesting, and getting his crops ready for market, may follow in easy, regular, and economical succession. And that it shall be such, as to require the least expenditure of manure and tillage, which may be consistent with a state of the greatest productiveness.

He will also keep in mind that his profits depend upon the economical employment not only of labor, but of time and space. He will, therefore, leave his land unoccupied by a crop as short a time as possible and increase his products by the frequent introduction of double or secondary crops. To this course, he will be the more strongly impelled, when he reflects, that, animal and vegetable manures, being volatile, are rapidly evaporated into the atmosphere, whenever the surface of the soil, in which they are contained, is exposed to the action of the sun; that this subtraction of the fertility of the soil is greatest, when there are no vegetables to be benefited by it: and that it is, therefore, one of pure loss, unattended by any equivalent or peculiar advantage of immediate production, or of remote amelioration. He will not allow his soil to clothe itself with a spontaneous growth: for then that fertility is expended in useless weeds which might be converted into valuable crops, and the selection of the plants, which should be the result of choice, is left to chance, a chance which is likely to intermingle exhausting with ameliorating vegetables, with salutary grasses, baneful weeds, whose ill effects, from the deposit of their seeds, will extend to subsequent crops.

(To be continued.)

(From the Genesee Farmer.)

ON SUMMER FALLOW: THE USE OF THEM RECOMMENDED.

Marcellus, Jan. 12, 1833.

Pursuing the subject of my preceding essay on the culture of wheat and the use of fallow crops, I come now to the consideration of summer fallows. I approach this subject, as well I may, with great diffidence. It is a subject which, through a long course of years, has employed the ablest pens of two hemispheres, and yet it has not been put at rest. Many important questions in relation to it still remain unsettled.

Some there are, (and it is believed their number is not small,) who object altogether to the practice of summer fallowing. The principal objections are the following: 1st. That summer fallows are not profitable, because they require the use of land two seasons for the production of one crop. 2. That they have an injurious effect upon the soil, by exposing it to the loss of many of its fertilizing properties.

The objections are at least plausible, and worthy of attentive consideration.

It is believed that the husbandry of this country has been, in many respects, misdirected, by yielding an undue respect to the theories and practices of other countries. It should be considered that the disparities between the condition of our husbandry and that of England are very great. There land is every thing, and labor of little account. The annual rent of an acre of good wheat land, in that country, amounts to a considerable sum. A loss of its equivalent is felt as a serious inconvenience. This then is a good reason for rejecting summer fallows in that country. But here the case is quite the reverse. With us, labor is every thing, and land is of little account. The annual rent of an acre of good wheat land, in this section of the country, allowing for rent a sum equal to the interest of its price if sold, would rarely exceed two dollars and fifty cents. This then presents no formidable objection to the practice of summer fallowing. It should be considered also, that the turnip husbandry, which prevails to a vast extent in England, goes far towards superseding, in that country, the use of summer fallows. In this country, especially in this section of it, the turnip husbandry cannot be advantageously adopted. It is a fact well ascertained, that the soil in general of western New York, is not congenial to the turnip crop. If it were, the climate of our country, the length and severity of our winters, and the genius of our husbandry, would present great and weighty objections

to its general introduction. For these reasons, and many others, I conclude that the objection to summer fallowing, which arises from its requiring the use of land two seasons for the production of one crop, is not worthy of great regard.

The second objection is far more subtle, and it involves greater difficulties. This objection is, that summer fallowing injures the soil by exposing it to the winds, and, without shade, to the scorching rays of the sun; and also, that it puts the soil in a situation to lose a valuable portion of its animal and vegetable properties, by putrescence and exhalation.

1st. I admit the fact, that summer fallowing does expose the soil to the agency of winds, by the means of which it suffers some losses. This evil is unavoidable. The objection applies to all sorts of tillage, and to every process by which the soil is pulverized and brought into a light and loose condition. The winds may blow away a portion of the finest and best of its particles.

2d. That the direct rays of the sun, beating upon unshaded ground, has an effect upon it to injure the soil, has not been proved to my satisfaction. I know that many writers have expressed fearful apprehensions of injuries to the soil by the agency of that heavenly luminary, without whose genial and life giving rays no soil could be productive—nothing could grow, and absolute sterility would characterize the whole face of the earth. Although many have expressed such apprehensions, yet no one has, to my knowledge, exhibited any thing in proof of the theory on which they are founded. It has not been proved that the rays of the sun, in whatever manner they come in contact with the soil, communicate poison to it. It is much more rational to suppose, that sun beams, instead of distempering the soil, impart to it health and vigor.

3d. It is admitted that summer fallowing exposes the soil to considerable losses, by hastening the putrefaction and decomposition of the animal and vegetable substances that are contained in it. These substances have their turns, in the course of the season, of being placed, by the operations of tillage, on the surface of the ground. Exposed as they are in that situation to the utmost agency of the atmosphere, they hastily ferment, become putrescent, and undergo decomposition. Their fertilizing properties depart in gases, and ascend into the atmosphere, where they are supposed to be lost. Here, then, we detect one of the most serious objections to summer fallows. But to do justice to the subject, and strike a fair balance, we should count gains as well as losses.

Those putrescent substances which, at one time, are placed on the surface of the ground, are, by the next operations of the plough, turned under, and others take their places. At all times, much the greater portion of these substances is covered beneath the surface. These, in consequence of the frequent agitations, changes of position, and intermixtures to which they are subjected, undergo rapid fermentation, but not so rapid as those that are uncovered. In the mysterious laboratory of nature, the whole mass undergoes a powerful chemical process, and who can tell how much it gains or loses?

It may be supposed, that as these putrescent substances which are covered evolve their gases, the superincumbent soil absorbs at least many of them, and derives from that source permanent fertility. The truth is, that by means of a summer fallow, an intimate intercourse is provided between the soil and the atmosphere. The soil, we know, loses much, and probably it gains much. It may not be easy to decide on which side the balance of advantage or disadvantage lies.

By means of summer fallowing, many substances contained in the soil are brought into action, and become its tributaries, which would otherwise remain inert, and be useless. The soil being frequently agitated and kept in the best situation to receive gifts from the atmosphere, doubtless does receive many

valuable donations from that rich store house. For aught we know, countless vapors, floating in the atmosphere, and replete with substances enriching to the soil, are thus caught, and become the means of its increased strength and fertility.

It may well be supposed that summer fallowing is beneficial to the soil, by separating, pulverizing, and intermixing its particles. Such was the theory of the celebrated JETHRO TULL, who, one hundred years ago, distinguished himself in England as an agriculturist. His theory was, that pulverizing and intermixing the soil were enough, without the aid of manure to keep it perpetually in a good condition for the production of crops. No doubt there was error in his theory, yet experience has abundantly proved, that frequent agitations of the soil, by means of which its particles are broken asunder and intermixed, add much to its strength and productiveness.

After all, it must be confessed that our knowledge on these subjects is very limited. It is not safe to rely on conjectures. What then are the facts in relation to the subject before us? Has it been found that summer fallowing is hurtful to the soil? When was it, and where was it, that a field was known to be injured, and rendered sterile, by the process of summer fallowing?

It will be seen that I am taking the side of summer fallows. On this subject my mind has vacillated. The time was when, trammelled as I was by the theories of British husbandry, I should have given my voice for the total, or almost total, expulsion of summer fallows. By experience and much reflection on the subject, I have been enabled to break the fetters, and now I am satisfied that summer fallowing is harmless as to the soil, and that it is one of the happiest modes of culture that can be practiced in this section of the country. If I mistake not, it is happily adapted to the genius of husbandry in western New York. If the desideratum is to subdue stubborn soils, or to cleanse the ground of foul weeds, no other mode of culture can be employed for either of these purposes to so great advantage as that of the summer fallow.

But while I recommend summer fallows, let it be remembered that I disapprove the style in which they are generally conducted in this country. Summer fallows should be commenced early in the season, that there may be time enough to perform the work in good style. The work should be done in so perfect a manner as entirely to destroy all the grasses and other vegetables that might be growing in the field. All the sods should be dead and rotten in season to be broken into fragments, and the whole surface of the field should be brought to exhibit a specimen of fine cultivation. In ordinary seasons, all this can be done without difficulty. Farmers would gain much by improving the style of their summer fallows, and bringing it to the standard I have now suggested. Advantages greater than many of them are aware of, would result from it, both as to the crop of wheat which is immediately to follow, and the better preparation of the ground for subsequent culture, and the production of other crops. DAN BRADLEY.

(From the Poughkeepsie Journal.)

CORN CROP ACCOUNT.

MR. POTTER: Poughkeepsie, Feb. 3, 1833.
If you think the following account (taken from my *Farm Book*) worthy perusal, it is at your service.
Yours, respectfully, T.

Account of corn crop of 1832—field four acres; sandy loam; corn in hills three feet apart.

Debit.		
96 loads manure at 50 cts. -	-	\$48.00
10 days' carting do. at \$2. -	-	20.00
34 days' ploughing—\$2. -	-	7.00
14 " marking out—\$1 25 -	-	1.88
5 " planting—75 cts. -	-	3.75
9 " hoeing and plastering—75 cts. -	-	6.75

10 cwt. plaster -	-	5.00
6 days' ploughing corn—\$1 25 -	-	7.50
84 " cutting up and stouting—75 cts. -	-	6.37
36 " husking and binding stalks, 75 cts. -	-	27.00
3 " team, carting corn, &c.—\$2. -	-	6.00
2 " two men carting stalks—\$2.75 -	-	5.50
1 bushel seed corn—63 -	-	63
1 " potatoes—37 -	-	37
Pumpkin seed—6 cts. -	-	6

Total expenses, - - - - \$145.81

Credit.

266 bush. corn, at 62½ cts. -	-	\$166.25
10 " potatoes—37½ cts. -	-	3.75
3 loads pumpkins—\$1. -	-	3.00
Stalks, -	-	22.00

\$195.00
Expenses, - - - - - 145.81

Clear profit, - - - - - \$49.19
Equal to the interest of \$175.00 per acre, even after charging the corn with all expenses of manure; it would certainly be fair to charge it with only half, as the succeeding crops will be materially benefited by the manure left unexhausted by the corn, and in case of that deduction, my field has yielded a sum (\$3.19) equal to the interest of \$297.00 per acre.

HORTICULTURE.

CULTURE OF GRAPES.

MR. SMITH: March 7, 1833.

The cultivation of the vine has been a pleasurable employment to me for some years, accompanied with results highly satisfactory; and as my experience principally has been with the delicate foreign varieties for table use, the relation of the mode of culture may, perhaps, be found acceptable to some portion of your readers, especially those who desire this delightful and profitable amusement in yard or garden cultivation. Could the experience of each individual be so obtained, with the particular description of situation, soil, exposure, and varieties of the vine, with the attendant circumstances, much useful information would be thus collected, that could not but be productive of important and valuable advantages. Willing to add my little to the heap, I have drawn up the following observations, being the result of eight years' practice in the propagation and culture of this plant.

I commenced in the spring of 1825, on Fells' Point, in a lot eighty feet square, and in the centre of a square of buildings; the soil composed of mixed earth, clay, tops of commons, oyster shells, and sand; the understratum being argillaceous earth. The varieties were the golden, red, and parsley-leaved Chasselas, Sultan, white sweet-water, Miller's Burgundy, Malaga, Malmsey, with a few other foreign sorts; of the American kinds, the Catawba, Isabella, Bland's Madeira, Schuyllkill Muscadell, and the Vevay grape.—Owing to the difficulty, then, of obtaining cuttings of superior foreign varieties, as there was at that period, in this state, but little general interest upon the subject, I was forced to adopt propagating with but *one bud* to each cutting, and this effect was successfully accomplished by choosing them from the strongest and perfected wood of the preceding year, from vines which had previously borne fruit. They were embedded in flower pots and boxes of earth; the side shoots removed, and the single branch trained perpendicularly. The following autumn, or in the spring, the roots were planted where intended with five, if practicable *ten buds* below the surface of the earth.—Those planted after this manner are far more vigorous and constant bearers, than the common mode of a cutting with four or five buds; but should the first season not have supplied the desired number, I more deeply

* Vines very luxuriant, but the crop almost nothing.

planted, kept the holes open, and filled up as they progressed in growth. This I would strongly insist upon, as it is well known the vine is fond of water, and will search it at great depths; and the more vigorous and directly perpendicular the tap root, correspondingly, will be the vigor and health of the vine.

Pruning is an operation of considerable importance to the healthful economy of the plant, but upon which no determinate and unalterable rules can be given.—We know plants have certain habits, which are greatly influenced by soil and cultivation, and which can only advantageously be understood by close remark and practice. And in no instance is this more forcibly illustrated, than in the effects consequent on this operation upon the vine. My observations lead me to the conclusion, that the Chasselas and some other foreign varieties should be cut close, and not permitted to bear fruit until the fourth year; this observance will greatly strengthen the root and perfect the future constitution and fruit-bearing wood. I usually prune the last week in February, or the first in March, but am not particular about it, provided it be done immediately before the rising of the sap.—The first season reduce to one bud; the second to two; the third two buds to each branch; the fourth year three; if intended to cover high arbors, at this period all the side buds should be taken close off, except the *two superior ones* to each branch, which are left to form a head for the future tree and the complete covering of the arbor. After this time, by keeping in view the age, vigor, and health, there can be no difficulty with attention to prune judiciously and correctly. There is, however, in the *trimming* of the *Sultana*, one exception to the general and peculiar advantages of close pruning. This truly beautiful and exquisitely delicious grape, is now nearly excluded from the yards and gardens of this city, and many places elsewhere in consequence of its unproductiveness. It is a vine of rapid and large growth, with difficulty restrained to its proper place, and giving itself mostly to the formation of new wood. It offers to the delighted amateur, in early summer, the fairest prospect of an abundant vintage, but before the expiration of a few weeks, he is vexed and disappointed at the gradual and constant fall of most every berry. Were it not for this habit of abortiveness, it would, certainly, be one of the finest table fruits in this or any other country; possessing every requisite to make it such; the vine is hardy, beautiful; the clusters large, and the fruit seedless, melting and delicious.—But notwithstanding this fault, I have persevered with it, and am satisfied that by adopting the subsequent mode of culture, we may obviate this disagreeable circumstance. Having observed its general proneness to the rapid development of new wood, which having the effect to perish the fruit, I made choice of the *first cuttings* from *healthy fruit-bearing vines*, (none others should be used,) and planted and pruned as above directed. The *fourth year* the vines were trimmed down to two or three buds, with the exception of *one branch*—two if very vigorous; and left their *entire length*, and trained to the trellis or arbor, *serpentine* or spirally. Attention being used to keep off the side shoots, particularly beneath the clusters, and at the *setting* or formation of the fruit, the wood of this season to be *lopped* to five or eight buds above the bunches. The effect of this procedure will be to check the rapid expenditure of the juices in the formation of wood and foliage, and to direct them into the racemes to perfect and mature the fruit. By pursuing the said principles of cultivation with this particular variety, I have never been without a good proportion of its fruit, some years as great a quantity by weight as one hundred to one hundred and twenty-five pounds from *five* five and six year old vines; and I cannot perceive why others should not have the same equal results by adopting the like course of management.

Some individuals contend that we cannot succeed in this country with the foreign grapes, particularly for the table, unless in small yard or garden enclou-

tures; and that our indigenous varieties are sufficiently good and nice for such purposes, and will and should supersede those of foreign importation. I wish it were so; but I must most respectfully beg leave, through my observations and experience to dissent from these opinions. I am, very probably, as greatly pleased at the development of the many resources of my country, and as fond to acknowledge them as any other person, and can eat an American grape with as good a zest; but I say *sum cuique*. I judge in point of excellency and quality for table use, that we have not as yet been fortunate in discovering one native, and I have not been unmindful or inattentive to them, that can, or ever will compete with a few grown in this country of exotic origin. And those few, too, with very little extra trouble, can and have been reared in field inclosures. I know that the Chasselas, both golden and red; the white Muscadell, and the white sweet water, have been successfully bearing fruit for some years in field culture in St. Mary's county, not half a mile from the Chesapeake shore; moreover, I know, there are very few farms around Baltimore, but where the common white sweet water has lived, flourished, and borne fruit abundantly for years. These facts are assuredly, strikingly convincing, that we may depend upon the choice of foreign vines for the supply of our markets with this important and useful fruit. As for the manufacture of wine, we are all satisfied from the results of our experiments, that we shall have to depend upon those of our own soil, and as the numbers are yearly increasing, there can be no doubt of every wished for success.

J. C. S. MONKUR.

(From the Maysville (Ky.) Eagle.)

CULTURE OF YELLOW LOCUST.

Dear Sir,—I perceive in your last paper an inquiry as to the manner in which the seed of the yellow locust can be made to vegetate. Concurring with your correspondent as to the importance of our farmers turning their attention to the cultivation of timber to supply the place of that which is rapidly consuming and annually becoming more scarce, and having some experience on the subject, I take the liberty of addressing you this note.

The seed of the yellow locust may be readily prepared for vegetation by the following simple process. Place the seed, three days before you intend to plant it, in a tight vessel, and pour over it a sufficient quantity of boiling water to cover the seed, and permit the water to remain on the seed twenty-four hours—at the expiration of that time, drain off the water, and again pour on boiling water as before, suffering it to remain on the seed as in the first instance, twenty-four hours. At the expiration of this period, again drain off the water, and pour boiling water for the third time, suffering it to remain as before, when the seed should be planted before it becomes dry.

After having been thus exposed to the action of boiling water for three successive days, it will be seen that the outer covering of the seed will, pretty generally, have been burst, and it will now readily vegetate.

I would recommend that they be planted like corn, in squares five or six feet apart, that they may be readily cultivated with the plough, as they must be for the first summer. The seed should be planted about the 20th or 25th of April. If planted earlier, there will be some risk of the young plants being injured by very severe frosts—light frosts will not injure them. Two or three plants in a hill are enough, but as some of the seeds may not be good, or so completely freed from the resinous matter which prevents the moisture from penetrating them, I would recommend that six or eight seeds be planted in a hill. If too many come up, they can easily be thinned when hoeing them, but two or three should be left standing in a hill to guard against accidents, and to prevent them from branching too much. As the plants are of

slow growth, when young, care must be taken to prevent the weeds from smothering them. New ground, or grass land is much the best for the growth of locust seed, as these produce but few weeds. The ground in which the seeds are planted should be carefully cultivated, and kept free from weeds during the first summer. In the month of September the ground may be sowed with timothy seed, when no farther care will be requisite except to keep a good fence around the young plants to protect them from stock.

Cattle are very fond of the leaves and tender branches of the locust, in the spring of the year, and are very destructive to the young growth, if not protected by good fences, until they become so large that cattle cannot bend them down. Sheep will also bark them, when young, during the winter and early spring months, but are not apt to injure them, after they can get a plenty of pasture. Great care should therefore be taken to protect them from stock until they attain a sufficient size to place them out of danger.

There is another method of cultivating the yellow locust, more convenient and rather more expeditious than that described above, when circumstances will permit a resort to it. I have practised this latter method with considerable success, and have now growing on my plantation not much short of two thousand thrifty young locusts, of various ages. The plan is this. I select a place where there are a number of locust trees, scattered over a piece of ground suitable for the purpose, and clear off all the timber except the locust, and cultivate the ground in some crop that will come off the ground early, say tobacco or pumpkins. When the crop comes off in the fall, the ground is prepared for timothy, and sowed in time to get a good set. The ensuing spring I cut down all the locusts growing on the ground, removing the brush, &c. The young locusts will now spring up in great numbers. The young timothy will not at all impede their growth, and will yet cover the ground sufficiently to prevent the growth of weeds. No further care will be requisite but to protect the young growth from stock, till it is sufficiently large to be out of danger. In a few years the young locusts will be so large, that calves and young colts may be safely pastured among them, especially if not put in until the grass gets a good set in the spring. In the mean time, if there are any spaces, not occupied by the young locusts, they may be moved. If the locusts put up too thick, they will need no thinning, as the most thrifty will soon overtop those that are not so much so; when the less thrifty ones will die, and make room for the others. Nor do they require any trimming. Growing in clusters they shoot up almost without branching, or if they put forth branches, they are small, and soon die and drop off.

I have locusts growing on my plantation both from the seed and from the roots of those cut down, as above directed. I prefer the latter method, when circumstances will admit of it, because attended with less trouble, and the growth is somewhat more rapid than from the seed. But where there is no situation suitable for this mode of cultivation, the other may be resorted to with great success.

If you suppose this note will at all promote the views of your correspondent, you are at liberty to make such use of it as you may think proper.

Yours, respectfully, A. B.

EATON'S MANUAL OF BOTANY.—Notice is given in the Albany papers that the sixth edition of this work is now in press in that city, and will soon be published. In this edition the genera are arranged under the Linnaean artificial system, and then repeated under the natural method, with the improvements of Brown, De Candolle, Lindley and others. The etymologies and accentuation of all the genera are given, and the plants of the northwestern lakes, of the Rocky mountains, &c. are added from Hooker, Douglass, Drummond, Golsie, Richardson and others, and the new species of De Candolle, &c.

RURAL ECONOMY.

(From the Southern Agriculturist.)

A SUCCESSFUL METHOD OF RAISING DUCKS.

Charleston, February, 1853.

Believing it to be the duty of every individual to contribute for the benefit of society, any information he may possess, however small, and on subjects ever so humble; and having for several years past been in the habit of seeking recreation during those hours which were not devoted to so vexatious studies and labors, in a variety of experiments on subjects of natural history, I propose giving you the result of some experiments in raising ducks, which were carried on during a number of years, and which finally eventuated in complete success.

It is sometimes beneficial to examine the causes of our failures, and it affords me pleasure at this moment in retracing the steps by which, after many disappointments, I gradually accomplished the objects to which my inquiries and experiments were directed. As an account of the process by which I arrived at these successful results, may not be uninteresting to those of your readers who devote themselves to rural pursuits, and who pride themselves on having a well stocked poultry-yard, I hope it may be no tax upon their time and patience, if I go somewhat into detail.

During many years I was struck with the general want of success which attended the raising of this species of poultry. Not one-sixth of the young were ever raised—they appeared to be subject to innumerable diseases. Those that escaped were stunted in their growth and did not arrive at full size till they were many months old. The general complaint among farmers and planters was, that this the most valuable of our poultry was a puny bird hard to raise and subject to many diseases. They could raise fowls and even turkeys, but there was no certainty with regard to the duck.

Desirous of investigating the causes of a failure in raising a bird which in its wild state is very hardy—which, although exposed to all the vicissitudes of the weather, raises large broods of young, I procured several ducks determined to pursue my experiments in various ways till I should either be successful or be satisfied that in a state of domestication, there existed obstacles to their successful rearing which no foresight or care could prevent.

At first I adopted the usual mode of giving them access to as great a body of water as I could provide for them in the yard. I therefore had an artificial pond made near their coops, to which they could resort as often as they chose; here they amused themselves at all hours of the day, in dabbling around the edges of the pool, and in swimming and diving in the water; but they did not grow—they were subject to cramps and fits, and one after another died, until I began to think that water was not their proper element. I varied their food—gave them rice-flour, corn-grist, boiled potatoes, hominy, bran, and many kinds of vegetable food, but with the same results—and at a hundred young that were hatched, I scarcely raised a dozen. I then began to mix with their food various medicinal herbs, believing that this might correct some deleterious properties of their food, but it was to no avail. I next procured the different varieties of ducks for breed, thinking that perhaps one kind might be better suited to the climate and the confinements of the poultry yard than another; but I was soon convinced that my want of success was not owing to my breed of ducks. Several years passed away and left me pretty much where I began, and I was almost ready to abandon any further attempts at raising the duck.

The thought at last occurred to me that in the food with which we usually fed this species of poultry, we departed widely from nature, and that, although the old ducks in their wild state fed on rice and the

seeds of various grasses that are found along the edges of the rivers, brooks, and ponds, yet, that at the spring of the year when the young wild ducks are hatched there are few seeds ripe, and it is questionable whether at that early age they feed at all upon grain or seeds. There appears in the digestive organs of these young birds something unsuited to this kind of food—it passes through them with out affording much nourishment. I had ascertained by dissection that their gizzards were filled not with vegetable food, but with the fragments of small craw-fish, worms and various aquatic insects, as well as the spawn of fishes, and I determined in the following year to try the effects of animal food. In due time my young ducks were hatched, beef was given them at first, after having been chopped very fine; this they devoured greedily and eat it in preference to all kinds of vegetable food. The effect upon their health and growth was immediate and surprising! They appeared to grow faster than any other poultry—in a few weeks they were out of danger, and in a few months fit for the table. As beef was expensive I tried cheaper kinds of food, such as the hoes of animals, crabs, fishes, &c. The result was equally favorable. I was now satisfied that in the article of food the end is attained by simply following nature and giving the young ducks animal food.

But although my experiment was thus far favorable, I found that many of my young ducks died after having been suffered to go in the dews and water, and that after many showers of rain they became thoroughly wet, and that when showers were succeeded by hot suns, they were subject to a disease of some apopleptic character, or a *coup de soleil* which killed numbers. Here I was much puzzled. I had succeeded in one instance by following nature, but I found that I could not carry my theory through, and that water affected the domesticated duck very differently from what it did the same bird in its wild state. The fact was not unknown to me that the down of young wild ducks is almost impervious to water: they are exposed to dews and rains—they dive to the bottom of pools and streams, and live in the water; yet they always keep dry—an oleagenous substance is spread over their feathers, from which the water glides off instantaneously and leaves the bird dry during all weathers. Not so with the young of the domesticated duck. Owing, either to the confinement of numbers in a small space, where their down becomes ruffled and displaced, or to their not being able to procure that kind of food which in the wild state is favorable to the secretion of that peculiar oil which is found contained in the glands of birds, and which serves to lubricate their feathers and protect them from the wet, the down of the young tame duck soon becomes thoroughly wet, and when this is once the case, it is subject to various diseases and is difficult to raise. To accommodate the young duck to that artificial state into which it had been thrown by domestication, I found it necessary to adopt some mode by which during the first few weeks of its life, the only time in which it requires much care it might be preserved from the effects of that element, which in its native state is almost its only residence, and furnish the means of its subsistence. A little reflection enabled me to guard against the inconveniences and dangers which result from this state of domestication. I had my coops built pretty large and tightly shingled, so as to be impervious to water. The young ducks were not let out in the morning dews till the sun had dried the grass, and the vessels in which their water was placed were raised over, so that they could drink by inserting their bills between these little railings, but were prevented from getting into the water. After following these simple directions with regard to food and shelter, I found that by a little attention of a servant, I could supply my table with ducks the whole year round—that I seldom lost one in twenty, and that they were free from all diseases. I raised from one hundred to three hundred

ducks per year, and now found that they were the easiest of all poultry to raise. I communicated the result of my experiments to my friends. Those of them who had the disposition—the patience and industry followed my directions, and in every instance met with the same success—I have their assurance, that they can now raise ducks in any numbers, and some of them have for the last two or three years supplied our markets with from three to five hundred ducks of the largest size and finest flavor.

After having carried my readers through this, perhaps to them, tedious detail of experiments which cost me much time and attention, but for which I was more than repaid by the successful result, I shall now proceed to give, under different heads, such simple directions as will enable our planters and farmers to supply their tables with this kind of poultry, which might be an object to those who are in the habit of supplying our markets.

1. *The species and varieties of ducks best adapted to the purpose of breeding.*—The only two species of ducks that are raised in this country are what are commonly called the English duck and the Muscovy duck. The English duck is a descendant of the wild duck that visits us every winter in such numbers called the Mallard (*Anas boschas*) is found also in Europe, and breeds in England, although not the largest it is certainly among the finest flavored ducks in the world. The flavor of the famous canvass-back duck (*Anas rallisneria*) that is found so numerous in the Chesapeake, and more recently in the Santee, and at the mouth of the Savannah river, is no doubt superior to it, but it is supposed that this is owing to the peculiar kind of food on which that bird feeds, believed to be the *Vallisneria Americana*—and that were it fed on common food its flavor would not be superior.

The English duck, which is so common in our yards, has from its long domestication, run into a number of varieties, which differ so much from each other as to appear like different species; they are of different sizes—of a variety of colors, and some are tufted. The variety to which I have usually given the preference, goes by the common name of the Madagascar duck, is distinguished by its being of the largest size—having a pretty long neck and almost invariably a light streak above the eyes, and usually a small streak extending from the lower part of the upper mandible to below the eye.

The Muscovy duck (*Anas Moschata*) is another duck more recently introduced, but which is now very common, and is well deserving a place in our poultry-yards. It was formerly, by most writers, considered as coming from the eastern continent, but is now well ascertained to be a native of South America. This duck, in our southern climate is, perhaps, more hardy than the other—sets more steady on its eggs, and lays in the spring and fall. A mongrel breed between this species and the English duck is easily produced, and has become very common; but these, though they are good layers, are unable to propagate their species.

There are other species of ducks, which the curious in these matters have partially succeeded in domesticating. I once saw a fine flock of the Gadwall duck, (*Anas strepera*), which an individual, in the upper parts of the State of New York, had succeeded in raising from ducks which he had captured, and which he freely in his yard, and made no attempts at flying away. Our beautiful summer duck (*Anas sponsa*) breeds freely in some parts of France and in the Zoological Garden in England. But it is very probable that the two species above mentioned are as well adapted to our purposes as any other, and that, for many years, they will be the only ones which will be generally kept in our poultry yards. One drake will answer for five or six ducks. Where mongrels are to be bred, place in a separate yard, one Muscovy drake to four English ducks.

2. *The best mode of procuring an abundance of*

Eggs.—When ducks are raised in the country and have access to rice fields, ditches, ponds, and the borders of rivers, they find food best suited to them and generally lay early and freely. But where they are necessarily kept in yards, and do not possess the above advantages, it will be necessary to adapt their food to their situation. A mixture of any kind of animal food with their rice flour, corn meal or grist, given them regularly and plentifully three times a day, will enable you to procure a great abundance of eggs; where this is neglected, your English ducks will lay but sparingly. I have observed that animal food is not so necessary to the Muscovy duck, but that they will generally lay pretty freely on being fed on grain alone.

3. **Setting and hatching the Eggs.**—The English duck, although a good layer, is very careless about hatching its eggs until late in the season. I have invariably used the common hen for that purpose; and when the young ducks are removed as soon as they are dry, their foster parent will set again on other eggs; and I have thus known a single fowl to bring out three, and even four broods of young ducks in succession. In that case, she should be repaid for her faithfulness by being richly fed. The young ducklings, in this climate, leave the shell on the twenty-sixth day. The Muscovy set a few days longer. A fowl of a tolerable size will cover from thirteen to fifteen eggs. After the eggs have been four or five days under the hen, you may, in the evening, examine the eggs by the light of a candle or lamp. Place the eggs longitudinally between the fore finger and thumb. If the egg be likely to hatch, it will be of a dark color, with streaks of red frequently perceptible; and the cavity on the thick end will be somewhat enlarged and transparent. If it be a clear egg, it will be wholly transparent, and it ought to be removed at once; and it it have not been kept too long in the nest, it is still fit for use. In this way, when several hens have been set nearly at the same time, it will frequently be practicable to remove a sufficient number of clear eggs, so as to place a fresh setting of eggs under one or more of them. The Muscovy duck sets faithfully, and may as well be permitted to hatch her own young.

4. **Method of destroying Fowl Lice.**—The insects which infest the setting hens may be easily destroyed by thoroughly sprinkling the nest, and wetting the fowl, even to the skin, with a strong decoction, made by pouring hot water on a good handful of common leaf tobacco, mixed when cold with a table-spoonful of spirits of turpentine, and double the quantity of gunpowder. It will be well, also, occasionally to take away their old nest and make a new one of fresh hay or straw.

5. **Duck Coops, Food, and manner of rearing the Young.**—Let your coop be made pretty large; say three or four feet in length and three in depth. Let it be well shingled, so as to exclude all water, and have a good pitch towards the front. Let it be light on three sides and barred in front, with a slide below the lower bar, so as to retain the ducks in unfavorable weather. A space of ten or twelve feet square, formed of common boards set up edgewise, will, when you have not much room in your yard, suffice for fifty ducks. Keep making coops in proportion as your ducks increase in numbers, and endeavor to keep the different sizes separated. The first brood, early in the spring, requires, for a few days, the warmth of the hen's body; and she should not be made to take care of more than twenty or thirty. A little later in the season, the young that are then hatched do not require the services of their foster mother, and may from the beginning be placed in a coop by themselves, to the number of fifty. Young Muscovy ducks may be treated in the same way; and they and the mongrels, and English ducks, may all be indiscriminately reared together.

As soon as your young ducks are hatched, let them be placed together, for a few hours, in a basket containing some warm inside lining; and when they have sufficient strength, place them with the hen in the coop. Feed them with meat, or animal food of any

kind, chopped fine with a common chopping knife. For convenience, I have usually had it boiled. A little rice flour or corn meal may be mixed with it, and the latter may be increased, if you have but little meat. Let this be continued for three weeks, and they are out of danger and can be raised on any kind of food. Still it is to be observed, that ducks will in all cases thrive better on animal food, and where this can be conveniently obtained, it may as well be given them. Those planters who live near our sea coast, by running a tight board fence across any small branch of salt water, and placing in the centre a fish-trap made of laths, can easily procure a sufficient quantity of fishes and crabs to feed all their young poultry. A man with a cast net, could in half an hour do the same. I have known persons, in the interior of the country, substitute squirrels, rabbits, and even venison; and one gentleman fed his young ducks on the flesh of alligators, thus rendering that which was a nuisance, subservient to his profit. When your young ducks begin to be tolerably feathered on the sides, which will be in five or six weeks, they may then be turned into the common poultry yard—always bearing in mind, that those which are best fed and obtain most animal food thrive the fastest.

I have not treated of diseases to which ducks are subject; since, by the above treatment, I have generally found them healthy.

As this is a long essay, and may be too great a tax on your readers to peruse, I would give, in a single line, the substance of my directions for the successful rearing of young ducks:

Give them animal food and keep them dry.

EXPERIMENTER.

(From the Farmers' Chronicle.)

FENCES.

It is a most erring policy, that induces farmers under the name and notion of *economy*, to inclose their grounds with temporary and defective fences. It is in truth the very worst of economy, or rather the very reverse of economy. It would be well for those who feel inclined to negligence, or to be governed by the "do-for-the-present" doctrine, to open an account of *debt* and *credit* with their fences for a few years; and if that should not cure them, they might be given up as incurable.

Perhaps some of our readers might be edified by a sight of such an account at any rate, if it should not happen to suit their own experience, it may give them some idea of this sort of *Book-keeping*: and here it is.

"Cornfield FENCE, Dr.

To corn destroyed by horses, cattle and hogs at different times, supposed one hundred bushels, say \$25.

To time lost in stopping *hog-holes*, repairing fences and mending *water-gaps*, say six days, *in harvest*—\$5.

To wounding one of the plough horses, in breaking over the fence, by which his services were lost for ten days when they were most wanted, say \$5.

To price of a hog of my neighbor Hodge, for which I had to pay, having *dogged* it in my cornfield, so that it died, \$3.

To time lost in attending a law suit about said hog, and costs of suit, \$5.

To loss of a valuable dog which I supposed Hodge had killed, in revenge for the killing of his hog by said dog, but which I could not prove, \$5.

To perpetual loss of Hodge's friendship, which had been steadfast for twenty years—amount not known.

To the spoiling of my young horses, Smith's cattle and Hodge's hogs, so that I shall never be able to fence them out effectually hereafter—loss not known.

To keeping me in *bad humor*, *fretted* and *crabbed* nearly all summer—damage incalculable.

Total, exclusive of the three last items, \$48.00
Credit,

By five hundred rails, the number wanting to make the fence good; but which as they must be finished next spring, are only saved for one year, su

that the interest on their cost is the only saving—cost \$10—interest at 10 per cent. is \$1.00.

By labor which would have been required to put the fence in good condition; say \$10 at most, but which having still to be done, is only entitled to a credit to the amount of interest as in the former case, \$1.00

Total, \$2.00

Balance against bad fences, \$16.00

And the said debtor (bad fences) being utterly *insolvent*, the whole amount is irreparably lost: except, that it has taught a lesson which may be useful hereafter.

SYLVESTER SLOVEN.

What came to pass in the case of neighbor Sloven, has happened to many others, and will continue to happen, until proper attention shall be paid to what should be a farmer's first concern, good enclosures.—Nothing can be more *unbearably* provoking, than after having toiled all the season to raise a good crop, then to have the whole destroyed in a single night.

But besides the security and actual gain of good fences, nothing more than this contributes to the neatness and good appearance of a farm, and without this it is impossible to do away a repulsive and condemning aspect of slovenliness, which indicates any thing rather than good husbandry.

But if he is censurable who neglects the enclosures about his fields, meadows and pasture grounds, what shall we say of him whose very garden—a spot which should of all others be *sacred* and secure, is constantly "profaned by *vandal* swine," and suffered to be trodden down by the "beasts of the field?" If he attempt his defence by saying there is nothing in his garden worth protecting, we say this too is his fault, and no less a one than the other. It is like making *drunkenness* excuse *theft*.

By the way, the subject of neatness, taste and utility in family gardens, deserves a fuller notice, and shall ere long have a full chapter. In the mean time let us improve the leisure of this winter in preparing to make all our enclosures substantial and secure before the vernal planting comes about.

(From the Genesee (Vt.) Farmer.)

TO CURE WOUNDS ON HORSES AND CATTLE.

As there are many useful receipts hidden from the public for the sake of speculation in a small way, by many who would be thought something of in the world, I am induced to lay before the public a receipt for making *King of Oil*, so called, which perhaps excels any other for the cure of wounds on horses or cattle, and which has long been kept by a few only in the dark. Feeling a desire to contribute to the good of the public, but more especially to the Farmers of Genesee, I send you the following very valuable receipt for publication:—1 ounce of green copperas, 2 ounces of white vitriol, 2 ounces of common salt, 2 ounces of linseed oil, 3 ounces of West India molasses. Boil over a slow fire fifteen minutes in a pint of urine; when almost cold, add one ounce of oil of vitriol, and four ounces of spirits of turpentine. Apply it to the wound with a quill or feather, which will immediately set the sore to running, and perform a perfect cure. Yours respectfully,

STEPHEN PALMER.

LEVEL ROADS.—Agricultural writers say that a road perfectly level is not always the best for the horses. Slight and short alternations of rising and falling in the road are serviceable to the horses, provided the drivers are skillful. By these variations the lungs and muscles of the horses are relieved. This is explained on the principle that constant exercise of any of the muscular powers tends to exhaust. Consequently, on a road perfectly level, the same set of muscles are unremittingly exercised; but if there are some descents and ascents, these are either entirely or partially relieved and others brought into action.—N. Y. Farmer.

LANCASHIRE GOOSEBERRY PLANTS.

Just received from England the following choice assortment of the celebrated Lancashire Gooseberry Plants, which are offered to the public with confidence in their superior quality, their genuineness, and fine condition. They will be packed so as to be carried safely any distance; but those that have to go far would better be ordered without delay. The following is a list of twenty-seven kinds:

WHITE FAIR.—Capper's Bonny Lass, Boardman's Smiling Beauty, Holden's White Muslin, Sampson's Queen Ann, Vates' Thrasher, Leigh's Toper.

YELLOW OR AMBER.—Nelson's Waves, Hill's Royal Sovereign, Weedham's Delight, Large Golden Queen, Forbes' Golden Eagle, Sandford British Favorite.

RED.—Walker's Bank of England, Kirsham's Fairmaid, Jolly Minor, Dean's Glory of England, Chadwick's Sportsman, Boardman's British Hero, Boardman's Prince Regent, Fletcher's Crown Regent, Milling's Crown Bob, Eckley's Jolly Printer, Bell's Glorious, Bratherton's Overall.

GREEN.—Hopley's Shannon, Parkinson's Laurel, Allan's Glory of Katelyll.

These plants have been carefully selected from the best sources by a competent person, and are truly fine.

Prices.—Several of these varieties are sold from the gardens at from 50 cents to \$1 per plant, (they are all superior kinds,) but I offer them as follows:

Purchasers may select at 40 cents each, or thirteen plants for \$5. When the selection is left to us we will send three plants for \$1, or sixteen for \$5. The number of each kind is very limited.

BUFFALO BERRY TREE OR SHEPHERDIA OF THE ROCKY MOUNTAINS.

When our friends send to us for Gooseberry Plants we can very conveniently pack with them one or more of these truly splendid trees, which, when in bearing, are literally loaded with delicious red berries, resembling the Antwerp Currant, and set as thickly on every twig as kernels of corn on the ear. Price \$1 each.

ANTWERP RASPBERRY AND CURRANT BUSHES;—GENUINE.

Just received a few plants of the Red Antwerp Raspberry, best kind, at 25 cents each, or \$2.50 per dozen. Common kind usually known by this name, and bearing fine fruit, 12½ cents each, \$1.25 per dozen, or \$5 per hundred.

Genuine Antwerp or Large Dutch Currants, 25 cents each, or \$2.50 per dozen.

Address I. I. HITCHCOCK.

American Farmer Office and Seed Store.

GRAPEVINES AND CUTTINGS.

For sale at the American Farmer Office and Seed Store, the following, which can be sent safely any distance:

ROOTED VINES.

Herbemont's Madeira, two years old, 33 cents each, \$3.30 per dozen, or \$25 per hundred.

Isabella, very fine roots, two years old, 37½ cts. each, or \$4.00 per dozen.

White Scuppernon, one year old 25 cents each, or \$2.50 per dozen.

CUTTINGS.

Cunningham, finest native grape, both for wine and table, 12½ cents each, \$1.25 per dozen, or \$8 per hundred.

Woodson, very fine do. do. same price.

[For description of these, see American Farmer, Vol. xiv. No. 33.]

Norton's Virginia Seedling, fine, same price.

Cuttings of the Isabella, Muscadell, and Golden Chaselas, 50 cents per dozen. I. I. HITCHCOCK.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at \$1 per bushel.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

FRESH GARDEN SEEDS—NEW STOCK.

I am now receiving from Europe my supply of those Garden Seeds, which it is necessary to import, which together with those of my own raising, and other American Seeds, make my assortment one of the most complete ever offered in this market.

With regard to the quality of the seeds I offer, I can only say I am confident they are good—perfectly so, and I am fully aware that this circumstance is of far more importance to myself than to any of my customers. It is under this conviction that I offer my present stock to the public.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

SILKWORM EGGS

For sale at the American Farmer Office and Seed Store, at \$1 per thousand. They can be sent safely by mail if ordered immediately, before the weather becomes warm.

I. I. HITCHCOCK.

AGRICULTURAL IMPLEMENT AND SEED STORE.

J. S. EASTMAN, No. 36 west Pratt-st. keeps constantly on hand a supply of his Patent Cylindrical Straw Cutters of the various sizes, which he will warrant to cut as much, according to their size, and to be decidedly superior in every respect to any similar machine made in this country.

Also, very superior Rag Cutters, for the use of Paper Mills.

Gideon Davis' Improved Patent Ploughs, of all sizes, with wrought and cast shares, and all kinds of castings for those ploughs by the piece or by the ton, as likewise for horse powers, on as reasonable terms as can be had elsewhere.

Wheat Fans, Corn Shellers, Threshing Machines, Harrows, Cultivators, &c. Likewise superior Cast Steel Axes, Hay and Manure Forks, and Scythe Snaths at wholesale and retail. Shovels, Spades, Hoes, &c. &c. and all repairs done at short notice.

Field and Garden Seeds. Such Grass Seeds as are in market will be kept for sale. My assortment of Garden Seeds is not so extensive as advertised by some, but such as I shall offer for sale may be relied on as genuine. The following I could furnish at wholesale, viz: Superior Early York Cabbage, and Long Scarlet Radish Seeds, and Early Frame Peas, the latter raised by Richard Cromwell, Esq.

REMOVAL.

SINCLAIR & MOORE have removed their AGRICULTURAL REPOSITORY to the CORNER OF PRATT AND LIGHT STREETS, HEAD OF THE BASIN, where they offer for sale a general assortment of IMPLEMENTS, FEEDS, FRUIT TREES, &c. &c.

Feb. 22.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of Hardy Rose Bushes, (among which is the much admired Greville,) double Altheas, Honeysuckles, Cornus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alantins, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—The market continues without material change. Holders of flour are more firm at our rates, and sales have been made at our quotations. Howard street flour from wagons is selling at \$5 12½. Wheat has advanced a few cents in consequence of the scarcity.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Line yellow, 18.00 a 26.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 81 hlds. Md.: and 23 hlds. Ohio—total 104 hlds.

FLOUR—best white wheat family \$6.75 a 7.25; super Howard-street, — a 5.25; city mills, 5.25 a —; city mills extra 5.25 a —;—CORN MEAL bbl 3 50;—GRAIN, best red wheat, 1.05 a 1.08; white do 1.05 a 1.10;—CORN, white, 55 a 58, yellow, 55 a 58;—Rye, 68 a —;—OATS, 40 a 41.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED 8.00 a —.—TIMOTHY, — a —.—ORCHARD GRASS 2.00 a 2.25.—Tall Meadow Oat Grass 2.00 a 2.50.—Herd's, 75 a 87½.—Lucerne — a 37½ lb.—BARLEY,—FLAXSEED 1.50 a 1.62.—Cotton Va. 10 a 12—Lou. 12 a 13—Alab. 10 a 11½—Tenn. 10a 12; N. Car. 10 a 12; Upland 10 a 12—Wmsey, hlds. 1st p. 28½ a —; in bbls. 29½ a 30.—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russia, ton, \$200 a 215. Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37a 38; Plaster Paris, per ton, 5 00 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.10 a 6 25.—Oak wood, 4.00 a 4.50; Hickory, 5.50 a 6.00; Pine, 2.25.

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The American Farmer,

Edited by GIDEON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, MARCH 22, 1833.

The article in the present number, on the subject of dividing large landed estates into small farms and renting them to practical farmers, copied from Sir John Sinclair's Code of Agriculture at the suggestion of a much respected friend, who has devoted much attention to the improvement of our agriculture, is worthy of attention. It will, we know, be said by almost every reader, that the most certain mode of ruining a farm is to rent it to a tenant; and this we also know is true with the system of renting almost universally pursued in this country, where our farming tenantry are, literally speaking, an itinerant community. Under the present system, the object of the proprietor is to get all the rent he can; and that of the tenant, all the produce he can from a single year, without reference by either to the improvement or even keeping up of the estate. The landlord says to himself: How much money can I get for this year's use of my land, and this is all he says. The tenant says: I will make no other improvement of the land than such as I shall reap all the benefit of this year; for I do not know how long I shall remain on it—and this is all he says. Under this system, it will not appear strange that the generality of rented land, in this country, is soon "worn out." But this is not the system recommended by Sir John Sinclair, to which we now call the attention of the reader. Our late worthy friend, Wm. H. Fitzhugh, of Fairfax county, Va. formed a plan of farming, by dividing his large domain into small farms, and renting them, upon very favorable terms, to qualified tenants, for the express purpose of improvement; but we believe the excellent project was defeated by the death of that gentleman. We should be glad to receive the suggestions and opinions of experienced gentlemen on this subject.

The following letter was not intended for publication; but we have concluded that we shall most effectually serve our friend by calling on the practical farmers, who have improved such land, for the information he desires. We have examined our previous volumes of the Farmer, and various other works, and find nothing that exactly suits the case of "W." Our own opinion is, that a course of green manuring and liming would be the best method of improving the land. A crop of cow peas might be ploughed in, followed by a good dressing of lime. If lime be too expensive or inconvenient, the calcareous earths (erroneously called marl) might be substituted. The low wet places should be drained. By a judicious use of green manure and lime, with the assistance of draining, we think "W's" land may be made good. But we hope some of our Virginia friends will take this case into consideration, and favor us with their opinions—as they will be of service to many others, as well as to "W."

King George C. H. Va. }
March 6, 1833. }

MR. SMITH:

As an introduction, I take the liberty of obtruding my standing as a farmer on your notice. I am an inconsiderable brother of that fraternity, owning only a small parcel (five hundred acres) of poor land, which is mostly hilly; that which lies best being level and low, but of a nature the most unfriendly to production, and all improvement. Some parts of the highland have a kindly mixture of aluminous with the silicious earth, so universally pervading the "forest"—or midland of the northern neck; but in consequence, I suppose of the want of the calcareous quality spoken of by Mr. Ruffin, they seem to be in a state of exhaustion. Three barrels of corn on an average, cannot be anticipated with certainty, on my best "shift"—whereof the high ground makes the most

considerable portion. It appears to me that manuring from the farm pen with the stock, which the farm will support, will prove a tedious means of improvement, and upon the whole, I look forward to slender profit, whilst unaided by the discoveries of better endowed neighbors. But it is some hundred of acres or more lying low and much disposed to be wet, that I should be inclined to reclaim, if in my power, from its present state of barrenness. It is called amongst us here, "pewtery," which name is vulgarly applied to land having a tendency to run together after being ploughed, and afterwards grow compact; yielding herbage very moderately and most favorable to wheat, in its best state, but unable to bear repeated cultivation without a barren return. Its physical properties I pretend not to designate in a chemical point of view, though the components appear to the eye to be firm, nearly impalpable sand, and yellow or white heartless clay mingled with it in varied proportions. Land of the same description in the immediate neighborhood bears upon it at this time, tall white oak, gum, &c. These it is in vain to remove, for though bedded, its product, even in the first years, in common herbage or grain, is too small to be considered any thing like a handsome remuneration for the labor bestowed. It washes with the most gentle inclination, taking some time to absorb moisture, but having done so, being mirry in many places.

Now, my kind sir, as you occupy the place of the friend of agricultural improvement, and will not say that I unfairly presume upon your assistance in this my private concern, I modestly, I hope, advance the inquiry for the best course to pursue towards permanent amelioration in this unkindly soil. I am young in this business, and have not had the advantage of the information, contained in the previous volumes of the Farmer, neither know I of the (perhaps) numerous valuable publications on the subject, which might enlighten the darkness with which I am enveloped; nor am I aware that remarks in your paper, of such a nature, tending to elucidate this matter, might possibly be deemed common place, and unneeded by the improved minds of your subscribers generally. If, however, such progress has not been made in the science of agriculture, or if made, you should incline to recur to any remarks, it will be a source of interest and pleasure to your subscriber to see them in any of your subsequent numbers, or any new notices of the kind which may come to hand, or emanate originally from your own pen.

37—We publish the following postscript to a letter just received, for the purpose of shewing what others think of our labors. We wish our friend could convince some of the *hundred thousand farmers* who never read an agricultural paper, of the correctness of his opinion with respect to the American Farmer.

"Inclosed is five dollars for the fifteenth volume of your valuable paper. The last volume has been well stored with the best of information for the agriculturist; in no way could the same knowledge be obtained for the same sum. In my opinion no farmer could lay out the same amount in any other way to the same advantage; he may thereby gain experience, without which he might expend twenty times the amount in one single experiment. With my sincere wishes for its more extensive circulation, &c."

TRANSPLANTING WHEAT.—An account appears in "The Philosophical Transactions," vol. 58, of a gentleman at Cambridge, having divided and transplanted a wheat root several times, and that the result was a produce of 591,000 grains, weighing 47 lb. 7 oz. Mr. Lance, of Lewisham, has this year been experimenting in a similar way. He took up a root in February which consisted of fourteen straws; this was parted into seven roots, and they have since grown to 170 ear bearing straws, besides some small-

er ones. Some of the ears are now (June 16) in bloom, and are six inches long. This is an increase from one removal and partitioning. A rood of ground sown in the autumn with wheat, was thinned out in February, and the thinnings were put into a garden mold that had had a dressing of chalk and sand. These transplanted roots are superior to those in the seed bed, many of them being six feet high, and some ears seven inches long; while the roots have tillered out to forty and fifty straws. They were placed nine inches apart. Transplanted old stubble last year is also in bloom, and are equally as fine as the autumn sown wheat; thus proving what Mr. Lance asserted in his essay "The Golden Farmer," viz. that wheat can be converted from an annual into a perennial plant. A visit to Lewisham would gratify the curious. The process of thinning, dividing, and transplanting wheat would afford excellent employ for redundant laborers in every agricultural district, as well as that of mixing soils, so strenuously advocated by Mr. Lance. Employment would make those happy and comfortable who are now miserably dependant on the poor's rate.

Weekly (Eng.) Dispatch.

BLACK VEILS.—Most persons, when they wish to wash their black crape veils, use vinegar. Washed in coffee, or rubbed with a cloth wet with coffee, gives them a more glossy, black, brighter appearance.—Bombazine dresses are cleaned in the same way. Coffee is better than vinegar, as it has less tendency to decompose the coloring matter.

[New York Farmer.

FOREIGN MARKETS.

LIVERPOOL, Feb. 2, 1833.

We have had but a limited inquiry for cotton this week, but there is no alteration in prices, and the quantity offering is moderate. The sales comprise 100 Sea Island at 12 to 14½d with 10 stained at 7d; 5150 Bowed, 63 to 8½; 2880 Orleans, 63 to 9d; 1140 Alabama, 63-8 to 7-3-8d—making a total, including other descriptions, of 11,830 bales, of which 1000 American are on speculation. Tobacco in good demand; about 220 hds. Virginia stemmed taken by trade and speculators. No transactions in Carolina rice, except for a parcel damaged. 200 brls. Montreal pots disposed of at 25s 6d. A good inquiry for N. York sowing flaxseed; sales amount to 1000 hds. one-half at 81s, price of remainder not known. No transactions in cloverseed or quercitron bark. Turpentine lower; 15000 brls. sold at 11s 6d; a parcel offered at auction withdrawn—the same as to American tar, which is held at 11s 6d.

LIVERPOOL COTTON MARKET, Feb. 4.

Although the demand has been unusually limited, there is not the slightest alteration to report in the prices of any description; the quantity on show throughout the week has not been more than sufficient for the wants of the buyers, and on Friday there was evidently less disposition on the part of the holders to meet the demand, without, however, producing any sensible effect upon prices. About 1000 bales of American have been taken on speculation this week, and 2100 bales American and 300 bags Brazils have been forwarded into the country, unsold, in the course of the last month. The sales amount to 11,830 bales, as follows:—100 Sea Island at 12d to 14½d; 10 stained, 7d; 5150 Bowed Georgia, 63d to 8d; 1150 Mobile and Alabama, 63 to 7-3-8d; 2880 New Orleans, 63 to 9d; 610 Pernambuco and Ceara, 8-3-8d to 9d; 350 Bahia and Macello, 74 to 8½d; 100 Maranh, 84 to 9½d; 250 Egyptian, 84 to 9½d; 680 Carthage, 6d to 6½d; 30 Syria, 7d. The imports are 18,101 bags.

AGRICULTURE.

(From Sir J. Smollet's Code of Agriculture.)

TENURE.

WHETHER IN PROPERTY OR ON LEASE.

In this section it is proposed to examine the advantages and disadvantages attending the occupation of land, either by the proprietor himself, or by tenants holding under him.

1. PROPRIETORS OCCUPYING THEIR OWN LAND.

It is certainly in various respects attended with public advantage, that a large proportion of the soil, should be the property of one class of the community, and in the occupation of another. In some of the American states, where, from a scarcity of population, leasehold tenure is hardly known, the land is often so much exhausted by the inattention of the owners, who think they may take any liberty with their own property, that in many districts the crops of wheat, do not exceed an average of seven or eight bushels per acre. How different is the case in this country, where the owner, instead of cultivating his own fields, lets them to another. A careful landlord, indeed, considers himself as a trustee for his family, and for the public. He will not suffer his fields to be exhausted, by improper management, or injudicious rotations; and when he grants a lease to a tenant, it is either to a person in whom he can safely place confidence, or under such covenants, as are the most likely to prevent that great source of public wealth, the soil of the country, from being injured by improvident management. It must be admitted, however, that such covenants are often very injudiciously drawn up.

When a tenant also, has a rent to pay to a landlord, it has a strong tendency to render him industrious. Without that spur to exertion, he would not take half the pains he usually does, to cultivate his farm, or to supply it with stock. The burden of rent is likewise attended with another advantage, for in order to be enabled to pay it, the farmer finds it necessary to supply the markets more regularly. When persons have no such stimulus, they are induced to keep up their produce, that they may enhance its value.

Besides, a tenant who cultivates the soil as a profession, has but one object in view; and he is therefore more likely to manage the concern better than a proprietor, who has often other avocations to distract his attention. Not only is the tenant necessarily more attentive to his business, but he carries it on at less expense: his cattle and servants do more work; the produce of his farm is more carefully looked after; and no money is expended, without the prospect of an adequate return. Expensive improvements, such as erecting commodious buildings, making roads, enclosing, draining, irrigating, and perhaps a very great application of calcareous matters, may be advantageously executed by the landlord; but in regard to raising the products of the soil, by judicious rotations of crops, complete aration, abundant manuring, selection of the best seeds, &c. an intelligent farmer has evidently an advantage.

As a proof of the justness of these doctrines, it is a well known fact, that small proprietors, when they are men of sense and ability, frequently let, or sell their own estates, and take the lands of others on lease; knowing well, that if they resided on their own property, they would be tempted to live like gentlemen, and to indulge in idleness and inactivity.

* General Report of Scotland, vol. i. p. 176.

† The Rev. Dr. Cartwright recollects a curious circumstance of a person who resided, about fifty years ago, in a village on the road between Newark upon Trent and Stamford, who had been obliged to sell his estate, took it on lease, and made as a farmer, so much money, that he was able to re-purchase it. Small proprietors in general are seldom possessed of capital sufficient to improve their lands, and frequently indulge

instances as have not been wanting, where, owing to negligence, or want of capital to improve it, the owner of an estate, has been obliged to sell it, and has hired the same land to farm, at a fair rent, and has done well.*

When the proprietors of considerable estates, cultivate their own land, they may have one of five objects in view: 1. Accommodation; 2. The pleasure of farming; 3. Profit; 4. To make useful experiments; and, 5. The general improvement of their property.

1. It is not only a healthy, but a most useful employment, for gentlemen residing in the country, to have some land in their own possession, for the purpose of providing themselves with various articles which their families may require. Perhaps these articles might often be purchased fully as cheap at market; and it might be more profitable to the proprietor, to let the land at a fair rent, than to occupy it himself; but the occupation of land is a source of rational amusement, and it is desirable for every proprietor residing in the country, to have a spot he can call his own, where he and family can take air and exercise. Besides, if attention to a large extent of arable land be found inconvenient, so much corn need only be raised by a landholder, as may be necessary for his own purposes, and after his fields are enclosed, and laid down to grass, he may let them to farmers or graziers, the proprietor reserving what is absolutely necessary for his own accommodation.† What the extent of such accommodation land should be, need not be here discussed; as it depends, upon the establishment kept up by the proprietor, the portion of time spent by him in the country, and the degree of superintendence that he can give to his farm.

2. When operations of agriculture were first attempted, it was for the purpose of procuring the *mere necessities of life*, but when these were once obtained, its conveniences and comforts were next sought after, and ultimately its refinements. Hence agriculture, which originally was considered to be a rude and simple source of employment, became, in process of time, a *liberal art*, capable of contributing to improve the scenery of a rich domain, or to shelter and adorn the residence of the great and powerful.‡ Hence *ornamental agriculture* arose, as distinguished from the useful. The distinction between them is, in general, abundantly obvious. The scheme of culture which a gentleman may pursue in his park, or on lands near his seat of residence, is generally a very different one from that a husbandman should adopt in his fields. The principle of the former is taste, that of the latter, economy, or thrifty management; the characteristic of the former, is *ornament*, that of the latter, *utility*; and the object of the former, is *pleasure*, that of the latter, *profit*. When the latter object is pursued on an extensive scale, it becomes a serious employment, requiring constant and great attention.

3. Though there are instances of spirit and great application, producing effects creditable to the owners of estates, who cultivate their own lands, for arable crops, yet their profit, generally speaking, is much less than if the same land were occupied by a farmer. Proprietors rarely attend to all those minutiae which a corn farmer must not neglect. Neither do they regularly oversee their servants, examine the state of

notions, which disqualify them from the pursuits of industry. *Cumbrian Misc. Report*, p. 20.—Hence, in the progress of society, this class of men gradually disappear. *Stirlingshire Report*, p. 69.—It is found more profitable, to have a capital in money, judiciously employed in farming, than a capital in land.

* Staffordshire Report, p. 39; Ayrshire Report, p. 77.

† General Report of Scotland, vol. i. p. 172; Husbandry of Scotland, vol. ii. p. 139.

‡ Cicero, in his Cato Major, has well observed, "That there cannot be a richer, or a more ornamental object, than a well cultivated field. *Agro bene culte, nil potest esse, nec usu uberius, nec specie ornatus.*"

their working cattle, attend fairs and markets, nor personally superintend the progress of all their farming operations. These duties, therefore, are commonly entrusted to a bailiff, [overseer,] who is seldom sufficiently qualified for them all; nor does he almost ever possess so much attention and frugality, as a prudent and well-informed farmer, whose personal interest is at stake, and who manages all his transactions. Though a landed proprietor, therefore, may have acquired sufficient practical knowledge of husbandry, to superintend the management of a farm; yet his other pursuits preclude him from paying such attention to those inferior objects, without which, it is impossible that he should farm to advantage, upon a great scale. Hence a species of farming arises, which is justly denominated *profuse agriculture*, founded on unlimited expense in tillage and manuring; by which, perhaps, double crops are obtained, but are raised at triple cost. Thus, with delusive notions of profit, many are betrayed into real, though unheeded loss. Indeed it is well known, that gentlemen cultivators, after having pursued the profession of husbandry for some years, with much ardor, have frequently relinquished it with chagrin. Where their farming, however, is carried on with economy, and in moderation, it is of much use, keeping up a spirit of experiment in cultivation, and in particular, tending to promote the improvement in stock.

4. It is next proper to observe, that since the attention of the public has been so much directed to agricultural pursuits, many respectable proprietors of land,* have cultivated extensive tracts of country, with the view of trying useful experiments, and disseminating a knowledge of agriculture in their respective neighborhoods. Nothing can be more laudable than such pursuits. The spirit of improvement which they have thus excited, and the important facts which they have established, must be in the highest degree gratifying to themselves, and useful to their country.†

5. Some landlords in remote and unimproved districts, convinced that example, and not precept, will alone dispel ignorance, and remove prejudices in rural arts and practices, have resolved to take a farm into their own hands, with a view of showing an example of correct husbandry to their tenantry; and they

* Among these, the Duke of Bedford, the Earl of Egremont, Lord Somerville, Sir Joseph Banks, Mr. Coke in Norfolk, Mr. Western in Essex, Mr. Curwen in Cumberland, Sir W. W. Wynne, and Sir Robert W. Vaughan in Wales, and others might be enumerated.

This has likewise been much the case in Ireland, where of late years, the landed proprietors have become agriculturists, either through necessity, (not having been able to dispose of their lands to advantage,) or from having caught the patriotic spirit of improvement, so laudably set by the sister kingdom. This has been attended with many beneficial consequences to that country. Gentlemen, instead of devoting their time only to pleasure and amusement, as was formerly the case, are now proud of being considered zealous improvers on their own estates, and do not consider a knowledge of rural affairs derogatory to their condition in life.—*Remark by Edward Burroughs, Esq.*

† Husbandry of Scotland, vol. ii. p. 140. Formerly a nobleman who directed his attention to experiments in cultivating the various and useful tribes of the vegetable kingdom, was considered by his brother peers as degrading his high station in life. But now, what a change! Every where proprietors are to be met with, who, by every means in their power, either by precept,—by example of improved culture,—by publications,—or by premiums, combat the prejudices of their uninformed tenantry, and become a blessing to their neighborhood.—*South Wales Report*, vol. i. p. 178.—In Ireland also, many of the nobility and gentry have become intelligent farmers; but as they seldom attend to the practical part of it, they often find it difficult to prevail upon their stewards to follow any new system. It frequently happens, that a failure in this case, either through ignorance or obstinacy, prevents a repetition of the intended improvement.—*Remark by Edward Burroughs, Esq.*

look for profit, not from the produce of the farm they occupy, but from the general improvement of their estate.* In other cases, improvements have been carried on by the proprietors on a still greater scale. When their estates have been in bad order, the farms ill arranged in regard to extent, figure, and boundaries, and the farmers dispirited, poor, and unskilled in agriculture, they have taken a considerable tract of country into their own hands, and, after improving it, have let it to enterprising and skillful farmers. They have then removed their servants, cattle, and implements of husbandry, to another part of the estate, and after treating this in the same manner, they have proceeded to others, as far as circumstances rendered it expedient.†

It is well known, however, that proprietors have in general derived the greatest profit from farms, which they have only partially improved. Indeed it seldom happens, that a landed proprietor can thoroughly improve a farm, without incurring much unnecessary expense; whereas, when a foundation has once been laid, a judicious farmer, with more attention and economy, can accomplish the same, or nearly as much improvement, on far more moderate terms. Nor, in economical agriculture, is any practice worthy of attention, in which the expense incurred, will not be repaid with a fair profit.

2. FARMERS OCCUPYING LAND.

In former times, the connection between a landlord and his tenants, was of a military description. The proprietor of an estate was himself a warrior; and those who possessed land under him, were his soldiers, who were bound to military service, and who paid him hardly any rent in money, but only some personal services, and a moderate quantity of some articles in kind, for the maintenance of his family.

When the feudal system was abolished, the landlord, at first, still considered himself as the patron of those who were placed under him. The rents continued low, the occupiers of the estate claimed, from generation to generation, under the name of "Kindly Tenants," a sort of tacit patrimonial interest in their respective possessions; and as they paid very inadequate rents, and had no permanent security in their possessions, nothing could exceed their indolence, their ignorance, and of course the poverty of their condition.

The connection between the two classes, is now of a description totally different. The landlord considers himself as the owner of an estate, of which he must make the most he can, for the benefit of himself and family. He lets it for a certain number of years, to persons possessed of skill, integrity, industry, and capital, under the obligation of paying him annually, a specific share of the produce, converted into money, besides being bound, if not to improve the value of the property, at least that it shall not be deteriorated during the currency of the lease. The contract becomes of course more of a mercenary nature, without, however, totally destroying ties of a more pleasing nature; for the landlord, on the one hand, must feel himself deeply interested in the success of his tenant, on which his own income and prosperity materially depend; while the tenant on the other, looks up to his landlord as a friend, whose interests are necessarily interwoven with his own, and

who will naturally be inclined, to give an industrious and improving tenant a preference, when the farm is to be re-let.

Under this system, it is essential both for the landlord and tenant, that the connection between them should be established on just and liberal principles, so as to induce men of knowledge, enterprise, and capital, to devote their attention to the art of husbandry. That can only be expected, where leases are granted. These furnish the most beneficial species of encouragement to agricultural improvement; indeed if any great exertions are necessary, they are not to be attempted without that security. Where a proprietor, therefore, does not incline to occupy his land himself, he naturally resolves to surrender the temporary possession of it to others, under such conditions as may be mutually advantageous.

A lease, indeed, is properly a contract, founded on the principles of equity, between two men for their mutual advantage. The one possesses an absolute right in the property of a certain tract of land and its produce, the other purchases the temporary privilege of appropriating the produce of that land to himself, at a certain stipulated price. The proprietor of an estate, may thus be considered as in the possession of a certain fixed capital in land, which is capable of producing, when duly cultivated, a certain annual value. The cultivator of the soil, on the other hand, possesses a moveable capital, consisting of the necessary funds for stocking a farm, his knowledge in the art of agriculture, and his industry. Thus situated, the parties, like other men who wish to enter into a joint concern, are induced, by the prospect of mutual advantage, to agree to unite their capitals, for the purpose of assisting nature in producing human subsistence; and their respective interests, having been mutually considered, their agreement constitutes the terms, or specific articles of the lease. On this plain principle depends the connection between landlord and tenant. The capital invested by the cultivator, the rent he pays, his skill and labor, the contingencies, and chance of loss that may arise, from the inclemency of the seasons, must all be compensated by the value of the produce of the soil. Where these principles are fully understood and acted upon, both proprietor and tenant will be placed in the most favorable situation, of which the nature of the transaction admits. But where these are departed from, the interest of the one, or of the other, or perhaps of both, must suffer, in proportion to the degree of aberration from that equitable line, which so distinctly marks their respective rights and obligations.

In regard to the manner of settling a lease;—the period of entry, and the regulations therewith connected;—the duration of leases;—and the covenants to be inserted in them, as these particulars require more detail than is consistent with the nature of a work restricted to general principles, it is proposed to discuss them in a separate paper. As to the form of a lease, and the stipulations essential for the interests of the two parties, these must vary so much, that it is hardly possible to reduce them to one uniform plan.

RENT.

The price periodically paid by the occupier, to the owner, for the use of his land, is called *rent*. It formerly consisted of a great number of particulars; as personal services, trifling sums in money, and various articles in kind, as grain, hams, pigs, poultry, &c. In countries unprovided with a sufficient quantity of circulating medium, payments in kind were unavoidable; nothing, however, could be more injudicious, when circulation became more abundant, than such payments. The grain, and other articles of a similar nature, were uniformly of inferior quality, and the exaction of personal services, was of little advantage to the landlord, while it was an oppressive burden on the tenant, obliging him to keep a greater number of men and horses than his own farm requir-

ed, and often interrupting the most important farming operations. Rent, therefore, in the present more advanced period of society, ought in general to be restricted to money payments; and the imposing of any burden ought to be avoided, which has a tendency to impede the industry of the tenant, or to withdraw his attention from the management of the farm.

The amount of rent, in a general point of view, must always depend on a variety of circumstances; as the wealth of the country;—the state of its circulation;—its population;—the price of produce;—the amount of public and other burdens;—the distance from markets;—the means of conveyance;—the competition among farmers;—and other less important considerations;—but the rent of any particular farm must be regulated by,—the nature of the soil;—the duration of the tenure, and the covenants contained in the lease;—the capital to be invested by the farmer in its culture;—and the expenses to which he is liable.

Poor land cannot possibly pay the same proportion of rent, according to the amount of its produce, as the rich and fertile. The labor of ploughing, harrowing, sowing, &c. when the land is in cultivation, is nearly the same, and yet the produce is greatly inferior, not only in quantity, but in quality. Indeed, where the produce is inconsiderable, or the quality much inferior, the whole, or nearly the whole, may be swallowed up by the expense of labor, and no rent whatever can be afforded, more especially in adverse seasons.

The duration of the tenure must have a considerable effect, in fixing the rent. No farmer can afford to pay the same sum for land on a short, as if he held it on a long lease. The covenants, also, which are in fact a species of rent, must influence the money payments.

Rent must also depend on the capital invested in the cultivation of the farm. Thus, if a farmer can lay out only 4*l.* of capital per acre, he may not be able to afford for it a higher rent than 10*s.* per acre; if he lays out 7*l.* he may pay 14*s.*; and with a capital of 10*l.* per acre, he may be enabled to pay 18*s.* or 20*s.* of rent. Hence the advantage of wealthy tenants; and hence the justice of the maxim, "That capital in the hands of the tenantry, is of as much consequence as the quantity of the land."

It is obvious, that all the expenses of a farm, must of necessity be defrayed by a sale of the produce, before any provision can be made for rent, and when these charges absorb more than the whole produce, there is nothing left for the payment of the landlord. The increase of the tenant's expenses, taxes, assessments, tithes, law charges, and stamps, as well as losses by bad debts, and otherwise, would have extinguished rent several years ago, if the price of the bushel of corn, and the pound of meat, had not advanced in proportion to the tenant's expenses, and the other burdens to which he is liable. In the present circumstances of the country, high prices for corn and meat, are indispensably necessary to the existence of rent, more especially upon inferior soils.

Upon the subject of rent, it is proposed to consider: 1. What proportion of the produce should be paid to the landlord; 2. Whether a specific sum in money ought to be paid, or whether it should vary according to the price of produce; and, 3. At what periods the rent should be made payable.

1. *Proportion of Produce as Rent.*—This is a question, that has long been considered as abstruse, mysterious, and very difficult to resolve. Some have supposed, that one-fifth was a reasonable proportion, while others contend for a fourth, or even a third

*Annals of Agriculture, vol. xxiii. p. 335. Mr. Young here justly questions the good sense and understanding of these landlords, who argue against rich tenants;—who are jealous of seeing a farmer on a good horse;—and think it presumption in him to drink a bottle of wine. In other words, that is saying, that it is better to receive only 12*s.* than 20*s.* of rent per acre.

*Some are of opinion, that instead of this kind of experimental farming, it would be of more advantage, both to the proprietor and to the district, to encourage a farmer from another county to set the example, as farmers are, in general, more ready to imitate the practice of their equals, than that of a large proprietor, who is so far removed from their own station in society, and, as they observe, who pays no rent for his land.—*General Report of Scotland*, vol. i. p. 172.

†In Scotland, this plan has been frequently adopted, and with much success. The exertions of an Earl of Findlater, of a Count of Argyll, and of a Robert Barclay of Cry, of a Henry Home Lord Kames, stand eminently conspicuous in that honorable list.

part of the produce of arable land.* But all former calculations on this subject, are rendered fallacious, by the effects of modern improvements. The rent ought certainly to depend upon the amount of the *disposable produce*; and that produce in grain, is greatly augmented, both by a diminution of the consumption on the farm, effected by improved implements, and a more correct arrangement of labor, and likewise a better cultivation of the land in tillage. Hence, while the price of wheat has greatly advanced during the last twenty years, above the average price of the preceding twenty, the rent of land has not only risen, but in a higher proportion. More grain, and that of a better quality, has been produced on the same extent of land, and a greater amount of disposable surplus has gone to market †

Out of this surplus disposable produce, it is evident, that the rent must be paid. But it is difficult to divide its amount between the landlord and tenant, as so much depends upon the seasons, and on the prices of the different articles which the farm produces. In bad seasons also, every deficiency of produce, in the acres set apart for supporting home population, must be made up from the disposable surplus; nor is it possible to apply the same rules to all situations, soils, and climates, in all the various districts of an extensive country. It may be proper, however, to give some general idea, of the proportion of produce paid as rent, 1. In Scotland; and, 2. In England.

1. In Scotland, the following table states what is considered to be a fair proportion, where the land is cultivated.

TABLE OF RENT ON ARABLE FARMS.

	Per English Acre.
1. Where land produces 10l. 10s. per acre, per annum, one-third, or	£3 10 0
2. Where land produces 6l. 12s. per annum, one-fourth, or	1 13 0
3. Where land produces only 4l. 5s. per acre, one fifth, or	17 0s

In regard to grazing farms, they are let on principles totally different from the arable, namely, according to the quantity of stock they can maintain; and as they are not liable to the same expense of management; both the landlord and the tenant receive larger shares of the produce, than in the case of arable farms.

2. In England, on the other hand, the husbandmen and their landlords, are in a kind of partnership, in which the tenant provides all the capital, and undertakes the management of the whole concern; as a remuneration for which, and for the interest of the money he has invested in it, he is allowed on arable land, equal to what is considered to be one moiety of the surplus, after defraying the expenses of cultivation, the taxes to which he is liable for the farm he occupies, and every other on-going. Hay land requires much less of his attention, and for this he only obtains one-third of the surplus. But the profits of grazing, depending much on superior judgment in

buying and selling stock, as well as skill in preventing, or curing their diseases, the grazier is entitled to a share of the surplus, fully equal to that of his landlord.

It has been contended, as a *general principle*, that as both the expense of cultivating land, and the value of its produce, are infinitely various, a farmer ought to calculate, what profit he can make on his *whole farm*, without entering into details; it being of little consequence to him, whether he pays at the rate of 10l. or 10s. per acre, provided he makes an adequate interest on the capital invested. That is certainly a fair criterion on which a tenant may calculate what he ought to offer; but a landlord, in estimating the rent he ought to insist on, must take into his consideration, the produce that his land is capable of yielding, and what proportion of it, or of its value, at a fair average, he has reason to expect, under all the circumstances of the case, which ought not entirely to depend, on the exertions of a timid, or penurious tenant.

What are the profits to which a farmer is entitled, is a subject of much dispute. On the one hand it is contended, that the produce of land, is of such universal and absolute necessity to the existence of mankind, that it is not reasonable it should yield to him who raises it, more than a fair profit. On the other hand it is urged, that a farmer is entitled to be fully recompensed for the application of a considerable capital, exposed to the uncertainty of the seasons, when it is managed with economy, and conducted with industry and skill; and it has also been observed, that it is seldom more money is got by farming, than an adequate interest for the capital invested. This is owing to *competition*, the articles produced, being in numberless hands, who must bring them to market; and *necessity*, the goods of the farmer, being in general of a perishable nature, on the sale of which he depends, for the payments he has to make, and the subsistence of his family.

To prove how moderate the profits of farming in general are, it appears from the most careful inquiries, that on *arable farms* they rarely exceed from ten to fifteen per cent. on the capital invested, which is little enough, considering that few employments are more subject to casualties than farming, or require more uniform attention. Some arable farmers, possessed of superior skill and energy, and who have got leases on reasonable terms, may clear from fifteen to twenty per cent. while others, who are deficient in these qualities, or pay too high rents frequently become insolvent.

In grazing farms the case is different, as they are attended with less expense of labor, and produce articles of a more luxurious description, for which a higher price will be given. Hence in such farms, fifteen per cent. and upwards, is not unusual. Besides, the grazier is more of a merchant than the mere arable farmer; is frequently buying as well as selling stock, and sometimes makes money by judicious speculations, though occasionally, from a sudden fall of stock, his losses are considerable. The grazier who breeds superior stock, and thence incurs great expense, is certainly well entitled, to more than common profit, for his skill and attention.

It has been observed, however, that a farmer seldom makes much money, unless he is most advantageously situated in the neighborhood of a great town, or unites with farming, some other profitable employment. But those who have capital and ability, adequate to the management of more than one concern, merit to be amply rewarded for their superior skill and industry.

2. *Mode of paying Rents.*—In regard to the mode in which rent should be paid, it is proper to consider, whether the whole, or, at least, part of the rent, ought not to depend upon the price of grain, not for the season, but on an average of a certain number of years preceding that for which the rent is due. By this plan, neither the landlord, nor the tenant, can

suffer from the fluctuating price of grain; whereas, without some such arrangement, the tenant on the one hand cannot make a fair offer of rent, lest the price of grain should fall too low; nor, on the other hand, can the landlord grant a lease of considerable duration, lest the price of grain should, in the progress of time, rise much higher. It seems therefore to be for the interest of both parties, that, on arable farms, a part of the rent should be payable in money, and part in corn, not in kind, but in money, according to the average value of a number of years. This plan is enforced by law, to the extent of one-third, in college leases; and thus an income is secured, in some degree proportioned to the value of money.

This mode, however, is not without its difficulties. The amount of rent, for improvable, and well-cultivated farms, does not depend so much on the price of grain, as is commonly imagined. A large proportion of such farms, usually produce green crops, the value of which depends upon the prices of beef, mutton, and wool, and not on that of grain. Various circumstances also may arise, which may reduce the price of particular sorts of grain below its usual level, (for example, barley, when the distilleries are stopped;) or may raise it disproportionately much higher, in case a large proportion of the wheat crop should be destroyed by rust or mildew. But if the proposed payment, by the conversion of corn into money, be extended to the various sorts of grain usually cultivated in the district, and be restricted to *one half of the rent*, it does not seem liable to any material difficulty. If the payment also, depends, on the average of seven or more years, the main objection to a coin rent, that the farmer is often liable to pay the most, when he is the least able to do it, is removed.

3. *Periods of Payment.*—These ought to be made so convenient to the tenant, that he may not be under the necessity of selling the produce of his farm to disadvantage, for the sake of ready money; nor should he be compelled to pay his rent out of his capital, for that would cripple all his future exertions. The periods should vary according to the nature of the occupation, and the time when the tenancy commenced. It is advisable, however, to have the rent payable at two periods of the year, in order to divide the burden of the payment, and that the tenant may not have any money unemployed, which too often leads to waste, and unnecessary expenses.

On the whole, the most successful farmers are those, who embark a capital sufficiently large in their undertaking;—who feel it their duty to watch over that capital with unceasing care, and to add to it whenever it is practicable;—and who have agreed to pay a fair, but not a speculative rent, for the lands they cultivate.

(From the Southern Agriculturist.)

ESSAY ON ROTATION OF CROPS;

By J. HAMILTON COOPER;

Read before the Union Agricultural Society.

(Concluded from page 3.)

In the preceding observations, an attempt has been made to sketch out, and to elucidate by the sound theories of science, those leading principles of a rotation of crops, which have received the sanction of the ablest practical and scientific agriculturists. Before proceeding to illustrate them by the practices of the best cultivated countries, it may not be useless to present, in a more distinct form, the following recapitulation.

First principle.—In the selection of crops, to consult the climate, soil, situation, the den and resulting from markets, and the other circumstances which constitute the peculiarities of local position.

Second principle.—Plants possessing a system of broad leaves, are to be alternated with those having narrow leaves.

Third principle.—Fibrous rooted are to be alternated with tap and tuberous rooted vegetables.

* It is an old remark, that every arable farm ought to produce three rents; one for the landlord, one for the expense of management, and one for the farmer; to which a fourth ought now to be added, for taxes, and parochial assessments.

† The use of two-horse ploughs, and the invention of the thrashing-mill, by augmenting the disposable produce, have greatly augmented the rents in Scotland.

‡ Husbandry of Scotland, vol. ii. Appendix, p. 173. In Chapter V. shall be given, very important estimates of the amount of disposable surplus, on a clay land, and a turnip-soled farm.

§ Dr. Coventry has drawn up "Estimates of the Produce and Rent of Arable Lands," varying according to the fertility of the soil, and on the climate or height of situation; with some explanatory observations, which are well entitled to the attention of proprietors, and their stewards, on the one hand, and the occupiers of the soil on the other.

Fourth principle.—The recurrence of the same plant, on the same field, or of plants of the same character, is to be removed as far as possible. And their return should be so much the longer delayed, as they have the longer occupied the soil.

Fifth principle.—Plants which during their growth require the operations of stirring the earth and weeding, to be alternated with those which do not.

Sixth principle.—The application of manure to be made to the most valuable and exhausting crops, as far as may be consistent with the preceding principle.

Seventh principle.—The succession of crops should be so arranged; that the work which they require shall follow in easy, regular, and economical order.

Eighth principle.—Land should be left bare as short a time as possible, and should be kept covered with plants valuable in themselves, or which contribute to the increased value of those which are to follow.

The first example of a course of crops will be drawn from French Flanders, a part of Europe inferior to no other in the value of its crops, the garden-like culture of its fields, and the skill with which its diversified products are combined, which claims to be the "true cradle of regular and systematic rotations of crops;" in which they have been pursued for a century; and when the fertility and beauty of the country—a happy and comfortable population amounting to nearly an individual to two acres of land, and a disposable surplus of one third of the products of the soil, attest the perfection of their peculiar system of agriculture, and is the highest eulogium which can be paid to the value of a rotation of crops.

In this district the courses of crops vary with the soil to which they are to be applied, not only in the kind but in the number of the plants of which they are composed: presenting a nice adaptation of the character of the vegetable to the peculiarity of the soil; and fulfilling all, or nearly all of the conditions of an enlightened system of rotations. Amidst the diversity which exists, from this cause, a leading principle is still observable in all of the courses whether of long or of short duration. The plants which compose them are thrown into three great divisions, comprising different natural families.† These divisions are made to alternate with great regularity, although the plants contained in them are frequently deranged in the order of their succession, to meet the fluctuations of markets, and the vicissitudes of the seasons.

The first division contains *Oleaginous* plants, as rape, flax, poppy, cameline and hemp; and plants of the *Solanææ* family, as potatoes and tobacco.

The second, embraces *Cereal or grain* plants, as wheat, barley, oats and rye.

The third, *Leguminous* plants, as beans, peas, vetches, lentils, clover, sainfoin and lucerne.

This mode of succession will be best illustrated by the following example taken from the vicinity of Lille.‡ It is a rotation on a farm of forty-eight acres.

1st year.—Plants of the 1st division.—Rape, with stable and liquid manure, 4 acres, followed as a 2d crop, by 2 acres of carrots, beets or turnips.

2d year.—Plants of the 2d division.—4 acres of wheat not manured; 2d crop, 2 acres of turnips, carrots, or cabbages, with liquid manure.

3d year.—Plants of the 3d division.—4 acres of beans.

4th year.—Plants of the 1st division.—4 acres of potatoes, with stable and liquid manure.

5th year.—Plants of the 2d division.—2 acres of barley, with clover cut the first year. 2 acres of oats, do. do.

6th year.—Plants of the 3d division.—4 acres of clover, three cuttings.

7th year.—Plants of the 1st division.—3 acres of flax, with liquid manure and oil cakes. 1 acre of tobacco, same manure, followed as a 2d crop, by 2 acres of turnips, carrots, &c.

8th year.—Plants of the 2d division.—2 acres of bearded wheat, 2 acres of rye, followed by carrots, turnips, &c as in 2d crop, with liquid manure.

9th year.—Plants of the 3d division.—2 acres of winter barley, cut green, 2 acres winter forage, followed by 2 acres of cabbages, beets, or turnips, as a 2d crop, with liquid manure.

10th year.—Plants of the 1st division.—Rape, 4 acres, for the seed, with stable and liquid manure, followed as a 2d crop, by 2 acres of turnips, carrots, &c.

11th year.—Plants of the 2d division.—4 acres, wheat, followed by 2 acres turnips and carrots, as a 2d crop.

12th year.—Plants of the 3d division.—3 acres beans, 1 acre winter barley, cut green, followed by a nursery of rape plants as a 2d crop, with liquid manure.

In this course of crops there are four returns of the three great divisions. Each return fulfils most of the important principles. *The first year*, the land is well manured, and well stirred and weeded. The application of manure is made to the most exhausting and valuable crop of the series. At the end of this year, the soil is left rich, well stirred and clean; qualities which are required by the grain crops which are to follow. The crops of this year are removed in time, to admit of the preparatory operations for those of the next. *The second year* the land is occupied by grain crops, which succeed perfectly well, as it is clean, enriched and well stirred. No manure is added this year, as its recent application fills the soil with weeds, and from an excess of vegetation, occasions the lodging of the grain. *The third year*, it becomes necessary to replace the grain crops, which have left the soil impoverished, hard, and foul with weeds, by some crop which is ameliorating and cleansing. Hence, the cultivation of leguminous crops this year, which by their broad leaves and succulent stems, draw their nourishment from the atmosphere, and by the decay of their leaves, stems and roots convey it to the soil: which by their system of tap-roots pulverize the earth; and by their dense shade, and the culture which they require, destroy the weeds produced by the preceding crop.

These effects are reproduced whatever may be the length of the rotation. "It may be seen," says the author from whom this example is taken, "that in this rotation of twelve changes, each variety of oleaginous, cereal and leguminous plants only returns twice; that the greater part and the most exhausting, as potatoes, flax, are only cultivated once. The great condition, therefore, of an extreme variety of crops is accomplished, and all the others are exactly fulfilled, since ameliorating crops and hoed and manured plants precede and follow the grain crops, which have the double inconvenience of exhausting and infesting the earth with noxious weeds."

The productiveness of this rotation is shown by its yielding four grain, four oleaginous, four leguminous, and four secondary root crops; being sixteen crops in twelve years.

The frequent introduction of double or secondary crops, forms a striking and valuable feature in this and all the other rotations of Flanders. One not less valuable is, that fallows, whether naked or covered, form no part of them.

It would be interesting to enter into an examination of the course of crops adopted in Dutch Flanders, as they present many useful hints, and valuable lessons, but I fear that I have already exhausted the

patience of the society; and as I purpose, should leisure permit, to offer at some future time, the result of a personal examination of the agriculture of that country, I pass from it with the less reluctance to the rotations of England.

These are much less perfect than those of Flanders, as they include, on strong clay lands, a naked fallow, (a practice justly exploded by the best agriculturists,) and from the climate and peculiar circumstances of the country, admit a less variety of plants, and consequently of a less protracted course of crops. These limited rotations are, however, managed with much judgment. I will instance only two.

The first is the celebrated Norfolk rotation; adapted to a sandy loam. The change which it has produced in the agricultural character of the country is so notorious, as to be familiar to all. An examination of the high state of culture, and of the beautiful crops produced by it, on soils of the most unpromising appearance, enable me to bear personal testimony of its excellence.

1st year.—Turnips, on 27 inch ridges, with from 8 to 15 tons of manure, and one-fourth of a ton of oil cake to the acre. Preceded by four ploughings and harrowings, and cultivated by two or three horse and hand hoeings. The crop cut on the ground by sheep.

2d year.—Barley, sown in drills of 7 inches, with-out manure. Ten pounds of white clover and 16 quarts of rye grass seed sown with it.

3d year.—Clover and rye grass.

4th year.—Wheat, in drills 9 inches apart.

This course is sometimes prolonged to five years, by continuing the clover and grass a second year.

Its excellencies are, that turnips and clover which are ameliorating crops, are alternated with barley and wheat, which are exhausting; plants with different systems of roots succeeded each other; the same plants recur only once; the manure is applied to the preparatory and cleansing crop of turnips, which being an ameliorating one, and eat on the ground by sheep, leaves the soil in a high state of neatness and fertility, to receive the exhausting crop of barley which follows; the interval between the wheat and turnip crops admits of the production of the fine tilth which the latter requires; the clover and grass induce the closeness of staple, desirable on a sandy soil for wheat, while the treading of the land by sheep, corrects that openness which is one of the defects of light, gravelly lands. The faults in this course are, that there is a waste of manure in feeding turnips on the ground, and that the shortness of its duration does not admit of the deficiency of manure which results from this cause, and from the number of exhausting crops, being supplied from additional ameliorating crops. These defects have led Mr. Coke to combine it with a second rotation, in which a peas crop succeeds a second year of grass, making a six years course of, 1st, turnips; 2d, barley; 3d, cocks-foot and other grasses pastured; 4th, grass pastured; 5th, peas; 6th, wheat. In this rotation the increase number of ameliorating crops, corrects the defect of the preceding.

The next examples which I shall offer to your consideration are taken from Italy, a country which approaching our own in climate and vegetable productions, becomes the more interesting to us for modified imitation.

On the rich alluvial plains of Po, in the vicinity of Parma, the following course of crops is that generally pursued.*

1st year.—Indian corn and hemp, manured.

2d year.—Wheat.

3d year.—Winter beans.

4th year.—Wheat, manured.

5th year.—Clover, turned in after the first cutting.

6th year.—Wheat.

This is an instance of highly productive, and very exhausting rotation; but which is sustained by the

* Yvart.

† Cordier. Memoire sur l'Agric. de la Flandre Française.

‡ Idem. p. 291.

♦ A mixed forage crop, principally of legumes.

• Lettres Ecrites d'Italie à M. Pietet.

great natural fertility of the soil, maintained by the abundance of manure which is afforded by an irrigated meadow of more than a fourth of the extent of the arable land, cut three times a year, and consumed by large stocks of cattle.

On the rice lands of Lombardy, the rotation adopted is of five years, being three years in rice, and two in natural meadow. For three years the land is planted in rice. "No manure is applied during this time; the continuance of the water would neutralize the effect, and its presence is sufficient for the vegetation. But after these three consecutive crops, the exhausted earth requires sun, air and repose. It is left uncultivated, and the humidity produces a spontaneous growth of plants adapted to the nature of the soil; it is manured, then only, on the new sward, and during two years an abundant but coarse crop of hay is gathered from it."

This rotation is not cited, as offering an example, for imitation, but merely to show the necessity which, in a country so fertile as Lombardy, and where there is a command of water, is deemed to exist, of manuring, and of resorting to a dry culture and a change of plants in the cultivation of rice.

In the valley of the Arno, in Tuscany, the following course of four years is a common one:—1st year.—Wheat, followed in autumn by Haricot Beans, intermixed with Indian Corn.

2d year.—Wheat, followed by Lupins.

3d year.—Wheat, followed by a forage crop.

4th year.—Indian Corn, millet or sorgho.

Being seven crops in four years, of which four are exhausting and three ameliorating. We have in this example an admirable instance of great productiveness, resulting from the introduction of secondary crops, which, at the same time happily interrupt the succession of the exhausting plants. It is owing to the latter cause, to great natural fertility, the highest cultivation, and to irrigation, that the soil is not exhausted under this rotation, which has been adopted, to meet the exigencies of a very dense population.

I will detain the society, to present to their consideration, only one more example of rotation, drawn from the vicinity of Sorrento, in the kingdom of Naples, in which our great staple is introduced.

1st year.—Indian corn, manured.

2d year.—Wheat, followed by beans.

3d year.—Cotton.

4th year.—Wheat, followed by purple clover.

5th year.—Melons, followed by legumes.

Producing eight crops in five years. "It is impossible," says Chateaubriand, "to make a better arrangement of the various crops. The nature of their vegetation, and the various cultures which they require, alternately rest and prepare the soil, of which the fertility is preserved by this variety, for the production of every thing which the earth can render to human industry."

ON PLANTING.—The sheepkeeper turns his capital once in a week or a month. The farmer turns his money once in a year, but the forest planter must discard the commercial maxim, a small profit and quick return; for he can scarcely turn his capital once in his lifetime. Still, however, nothing can pay better than the planting of waste lands with forest trees. Oaks, pines, and willows, will give more profit than ferns, heath, and rushes, and a practical man with four laborers under him could superintend 500 acres. A man cannot amass a large property for his children by a small outlay so surely as by planting.

MAMMOTH COTTON STALK.—The dry stalk of a cotton plant, grown in Texas the last season, has been left at our office, by Capt. Dismoor, which is really a curiosity. It measures 15 feet in length, and eight inches in circumference, near the root, decreasing gradually to the top.—*Mobile Register.*

* Chateaubriand.

† Simonde Tableau de l'Agric. Toscane.

HORTICULTURE.

CULTURE OF ASPARAGUS.

Normanstone, near Georgetown, D. C. }
Mr. SMITH: March 12, 1833. }

I think I could suggest to friend Sinclair a better mode of raising asparagus, than that pointed out in his communication in your paper of the 15th ult.

In order to have strong plants, a point very essential to ensure fine asparagus, the seed bed should be dug to the full depth of a spade, say 12 inches, and the earth thrown out, then filled with good rotten manure, on which the seed may be sown, and covered two or three inches with the lightest and best of the soil; and as it is of vital importance to keep the seed beds carefully clear of weeds, this will be facilitated by having them quite narrow, so as to be able to reach from each side without the necessity of treading or pressing on them. The fall, so soon as the seeds are quite ripe, is the best time to sow them, or as early as possible in the spring, the seed should be entirely cleaned of the skin and pulp, a very easy operation. This mode of sowing ensures strong good plants which when only yearlings, will be quite as ready to plant in their permanent beds, as two year old plants generally are.

In laying out the beds, which need not exceed three feet six inches wide, dig a trench in the middle, two feet in width and fifteen inches in depth, which fill with good short manure, and plant thereon two rows only: the earth thrown out will be sufficient to cover them and to raise the whole bed uniformly, as high as needed above the alleys. These narrow beds have the same advantage as the narrow seed beds for clearing and cutting; and I am not sure that even single rows would not be preferable. It is impossible when there are three or four rows in a bed (unless they be crowded too close to each other) to reach to cut or clean from either side without treading on the bed.

In the fall, the haulm should be cut off as soon as the seed pods begin to show indications of changing to ripeness, lest by awaiting the last powerful effort of nature, that of perfecting and maturing seed, the plant be weakened; on the other hand if cut earlier, and the season continue mild, there would be great risk of a fresh crop of heads being thrown up, which would equally exhaust the plant and destroy the hope of the succeeding season. The haulm should be dried for a few days and then tied up in sheaves, and secured for the very useful purpose of covering lettuce or other small plants through the winter, for which it is eminently fitted by its lightness, and warmth, without affording shelter to the ground mice to commit their ravages on the crop under its care.

In dressing the beds, I prefer, to the old mode of covering them with a coat of manure through the winter, to remove the soil from the roots, taking care not to injure the crowns, then fill well in with short manure and replace the soil over all; by this means none is wasted by evaporation, but all is at once applied on the very object of its application and the effort is to bring forward the crop full ten days earlier than in the usual course.

Some years ago being in Belgium, I observed in the neighborhood of Brussels that the gardeners were in the spring covering their asparagus beds with a thin layer of clay puddle which was smoothed over the surface, and formed a receipt of a coat of plaster of three-fourths to an inch in thickness. As far as I could make out from the want of mutual understanding of our respective languages, the intention was to prevent the heat coming too rapidly through the surface, and I supposed that the poor spirey dwindling sprays could never make way; and none but stout stems and which by the delay became more blanched, could emerge to day light, but whatever the purport, the produce was delicious, and far surpassed, as indeed all their vegetables do, any that I have met

with any where, not excepting even that raised at Chelsea, or the eastern shore of your state.

I submit these observations as my small contribution to your valuable periodical, and as hints to be improved upon by more experienced men than myself.
R. B.

LARGE PUMPKINS.—Mr. David Warren, of York county, Pennsylvania, advises the York County Farmer that he raised nine pumpkins, from one seed, during last season, the united weight of which was six hundred and ninety pounds. The largest of the nine weighed one hundred and two pounds, and the smallest forty-two pounds. "Beat this," says Mr. Warren, "and I will try it again."

RURAL ECONOMY.

PEN YOUR HOGS.

Mr. SMITH: Woodside, Del. March 15, 1833.

I have often been astonished to find it is the general plan with farmers to allow their hogs to run at large the most of the year, placing their crops in a constant liability to be injured by them, as the best of fencing is but a poor defence; for a bar being left out or a gutter washed by rain, easily gives them the opportunity of destroying a deal of the farmer's hard earned crops. But without any of these accidents, their loss in another way is much more than they may imagine; I mean in the article of manure, which all certainly will allow ought to be the aim and principal object to amass as much as possible in every possible manner; the manure made by these animals is of the very best kind, and by proper care a large quantity may be made by a few of them. Some object to it by saying the litter given to them might be as well used in the barn yard; but they must remember it is made at a time when our barn yards are without stock; and the pig pen is a convenient repository for all the rubbish you can accumulate, weeds from your garden and all weeds or coarse grass you can cut from any part of your grounds during the summer; also the rakings of your stubble ground the spring succeeding a crop of wheat and many other sources unnecessary to mention. A little earth spread over each layer of litter will be found a great advantage as it induces them to root among and stir it up which soon produces fermentation.

It would astonish any one, unless they have given it a trial, how much manure may be made in this way of the very best description. For instance, the past year I kept eighteen hogs, the cost of their feed (exclusive of corn while fattening) was \$2.00 per head, making a total of \$36.00. I have not a doubt I shall be able this spring to draw out of their pens over one hundred large three horse cart loads. Manure is now selling in Wilmington at \$1.25 per cart load, which at one hundred loads leaves a balance in favor of the hogs of \$89.00, without the expense of hauling it from Wilmington, a distance of three miles; the hauling of which would much more than cover the additional expense of tending them when kept up. I have a strong rack fixed in the pen similar to a sheep rack in which they get fresh grass three times a day; having which they require but little feed to keep them in good thriving order. As I am convenient to merchant mills, I get an article called sweepings which is sold for that purpose, consisting of corn meal, flour and the offals of the grain, this we mix with milk and water and give them for wash.

Let any one give this plan a fair trial and I am convinced they will never again allow their hogs to roam about, which not only appears slovenly but must keep them in constant fear of their breaking into the grain or other crops. If by these plain matter of facts I can induce any one to give it a trial, and thereby cause a slight improvement in agriculture, the end is gained, of
Respectfully, yours,
S.

MISCELLANEOUS.

METEOROLOGICAL JOURNAL.

For 2d mo. (February,) 1833, kept at Clermont Academy, near Philadelphia, by S. S. GRISCOM.

Day of the month.	Therm. at sunrise.	Clouds at sunrise.	Winds at sunrise.	Remarks, a.m. and at m.		Therm. at 2 1/2, p.m.	Clouds at 2 1/2, p.m.	Winds at 2 1/2, p.m.	Remarks p.m. and evening.	
				a.m.	m.				p.m.	9, p.m.
1 20	MS.		NW 7	18° at S.	20, 0. NW 6	23	C.	NW 4	19 c; NW 2	
2 19	C, MS;		NW 4		24 MS; NW 4	26	C, MS;	NW 4	24 em; NW 3	
3 21	MC.		NW 4		25 MS; NW 4	31	MS;	NW 4	21 c, NW 2 aurora,	
4 20	C.		NW 4		29 0. NW 4	29	C.	NW 6	29 es; NW 3	
5 23	C.		NW 3		39 ems. W 3	39	CMS;	WS:W 2	29 c, SW 2 snow.	
6 34	CMS.		SW 2		42 MS; NW 5	43	MS;	NW 7	27 MS; NW 7	
7 20	MS.		NW 8		26 MS; NW 8	28	MS.	NW 8	23 0 NW 8	
8 17	0		NW 2		28 0 NW 4	32	0	NW 2	27 es. SW 3	
9 31	CS.		SW 4		44 haze; SW 4	50 0, hazy	SW 4	SW 4	27 es. SW 2	
10 33	CS, haze		0		47 haze; MS, SW 3	52	C, hazy;	SW 2	45 es, SW 3	
11 37	CS, MCS.		NE 4	r. hail:	33 MCS. NE 4 r. hail	33	CMS.	NE 4 sleet,	30 MCS. NE 5 r; h: sleet.	
12 34	gl. r. sno		0	snow:	43 MCS. SW 2 hazy	44	CS, haze	SW 2 r; NE 1	37 ems. r; NE 3 r:	
13 33	MCS, R:		N 1 5 r:		36 MCS. N 1 8 r,	37	EMS, r;	N 1 5 r, NE 2	32 MS, NW 1—NW 7 in night	
14 31	MS.		NW 7		33 MS, NW 2	35	MS.	NW 2	30 haze: W 1	
15 29	CS.		N 1 4 snow,		31 MCS. N 1 3 snow.	31	MCS, sno	NE 1 snow NE 1	29 snow NE 6	
16 23	C.		NW 2		38 c, W 1	38	C;	NW 2	31 c; NW 1	
17 31	CS.		W 1		43 CS; SW 1	45	C.	SW 2	39 ems. SW 2	
18 39	fog.		SW 1	wet	49 es. SW 2	51	CS.	SW 2	43 es; SW 2 r, in night	
19 41	CMS.		SE 2	wet r:	49 ems. r, SE 1	49	CMS. R.	SE 3	43 ems: W 1	
20 40	CS.		SW 2		51 c; es: SW 2	51	CMS:	SW 4 SW 5	39 ems. NW 5	
21 25	MC, CS.		NW 3		31 MS; NW 4	33	MS.	NW 5	27 0 W 1	
22 26	C.		NW 4		43 c, SW 5	45	C.	SW 6	26 0 SW 5	
23 31	0		0		51 0, W 1	53	0	W 1 E 5,	39 0 E 1	
24 35	CMS.		SE 2		54 c; SW 3 haze	58	CS:	SW 5 r, SW 7	19 MS, NW 8—17° at 11	
25 19	MS.		NW 8		26 MS; NW 6	28	MS:	NW 7 snow,	21 0 NW 5	
26 17	C.		0, W		35 c; SW 5	39	CS:	SW 6	31 0 SW 3	
27 39	CMS:		SW 5		51 c, MS; SW 5	46	MS;	NW 6	21 es, NW 5	
28 25	CS.		NNE 2	snow;	25 CS; E 3	26	MCS.	NE 3 snow:	23 snow: NE 1	

SUMMARY.

Mean temperature at sunrise, 28.29.

Do. at midday, 39.32.

Mean for month, 33.80.

Range, 41°.

Maximum of temperature, 58° on 24th.

Minimum of temperature, 17° on 8th, 24th and 26th.

Warmest day, 47° on 20th.

Coldest day, 21.5 on 1st.

Temperature below 32° on twenty days.

Do. above 32° on eight days.

Wind west on twenty-three days.

Wind east on five days.

Rain on six days.

Snow or hail on five days.

Fair weather, eighteen days.

Cloudy and stormy, ten days.

Temperature compared with last month, 1.62° colder.

Temperature compared with same month last year.

1.17 colder.

The winds in this month were unusually high and very variable. The weather through the winter remarkably variable, though at no time very severe—the ground scarcely covered with snow at any time—till the last day of the month, when snow fell through the day and night five or six inches deep—sleighting continues good to March 7th.

MEMORANDA.

1st. Roads very muddy, much frozen, but not hard enough to bear a carriage. Cirrus clouds remarkably fine, in lines from west to east, north of the zenith, with patches in the south.

3d. A fine flock of meadow larks (*Sturnus ludovicianus*) near the academy, these seldom visit this neighborhood, though they are abundant along the

shores of the Delaware, further south, and are of great value, to graziers in destroying insects; especially grasshoppers (*Acerida verrucivara*, &c.) and crickets (*Acheta campestris*, &c.) which they eat in surprising quantities—this habit has induced some farmers to give them protection, and to forbid shooters molesting larks on their premises—it is time our agriculturists were more awake to the importance of cultivating the friendship of our beautiful feathered visitant, instead of permitting a cruel exterminating war to be waged against them.

12th and 13th. Storm from N. E. with much rain. 15th. A violent snow storm from N. E. from four to six inches deep, afforded a little poor sleighing the first this winter.

23d. A delightful morning, observed to day numerous blue birds (*Ampelis sialis*.) they seemed constantly to prefer the topmost twigs of the trees. It is a common saying with the country people, that when the blue birds set on the highest branches, we shall soon have colder weather, but if they prefer the lower parts of the tree the weather will be mild—also the flicker, or golden-winged woodpecker, (*Picus auratus*.) the cow blackbird, (*Icterus pecoris*), &c.

24th. In the evening the wind was S. W. 6, but shifted to N. W. and blew a perfect gale with snow, hail and rain, after a delightfully pleasant day—the storm continued till 9 P. M. when it cleared and became very cold; the temperature changed from 55° to 17° in less than eight hours.

25th. In the morning observed moles busy at work under the snow heaving up the ground, apparently seeking a shelter, after having been tempted out by the pleasant weather the day before.

26th. Snow all day and continued the next day.

CURIOUS EXPERIMENT ON A RATTLESNAKE.

The following curious facts, respecting the rattlesnake, are from a letter of Judge Samuel Woodruff, to Professor Silliman, in the last number of the American Journal of Science:

During the summer months of 1801, I resided in the northeastern part of the state of Ohio. Rattlesnakes were then very numerous in that region. I found the opinion universally prevalent, among the inhabitants there, that the leaves of the white ash are highly offensive to the rattlesnake. Several persons of respectability assured me that the rattlesnake was never found on land where the white ash grows; that it was the uniform practice among hunters, as well as others, whose business led them to traverse the woods in the summer months, to stuff their shoes and boots, and frequently their pockets also, with white ash leaves, as a preventive of the bite of the rattlesnake; and that they had never known or heard of any person being bitten who had used this precaution.

Some time in the month of August, I went with Mr. T. Kirtland, and Dr. C. Dutton, then residing at Poland, to the Mahoning, for the purpose of shooting deer, at a place where they were in the habit of coming to the river, to feed on the moss attached to the stones in the shoal water.—We took our watch station on an elevated part of the bank, fifteen or twenty yards from the edge of the water. About an hour after we commenced our watch, instead of a deer, we discovered a large rattlesnake, which, as it appeared, had left his den, in the rocks beneath us, and was slowly advancing across a smooth, narrow sand beach towards the water. Upon hearing our voices, or for some other cause, he stopped, and lay stretched out, with his head near the water. It occurred to me that an opportunity now offered to try the virtues of the white ash leaves. Requesting the gentleman to keep, in my absence, a watch over our object, I went immediately in search of the leaves, and on a piece of low ground, thirty or forty rods back from the river, I soon found, and by the aid of my hunting knife, procured a small white ash sapling, eight or ten feet in length; and, with a view to make the experiment more satisfactory, I cut another sapling of the sugar maple, and with these *reeds* returned to the scene of action. In order to cut off a retreat to his den, I approached the snake in his rear. As soon as I came within about seven or eight feet of him, he quietly threw his body into a coil, elevated his head eight or ten inches, and brandishing his tongue, gave notice of preparation for combat.

I first presented him the white ash, placing the leaves upon his body. He instantly dropped his head to the ground, unrolled his coil, rolled over upon his back, writhed and twisted his whole body into every form but that of a coil, and appeared to be in great anguish. Satisfied with the trial thus far made, I laid by the white ash. The rattlesnake immediately righted, and placed himself in the same menacing attitude as before described. I now presented him the sugar maple. He moved in a moment, striking his head into a tuft of the leaves, with all the malice of the under hand; and the next moment he coiled and lanced again, drawing his whole length at each effort with the swiftness of an arrow. After repeating this several times, I again changed his *fire*, and presented him the white ash. He immediately *dropped his peak*, stretched himself on his back in the same manner as at the first application. It was then proposed to try what effect might be produced upon his temper and courage by a little flogging with the white ash. This was administered. But instead of arousing him to resentment, it served only to increase his troubles.—As the flogging grew more severe, the snake frequently struck his head into the sand as far as he could thrust it, seeming desirous to bore his way into the earth and rid himself of his unwelcome visitors.

Being now convinced that the experiment was a satisfactory one, and fairly conducted on both sides,

we deemed it unnecessary to take his life after he had contributed so much to gratify our curiosity; and so we took our leave of the rattlesnake, with feelings as friendly at least as those with which we commenced our acquaintance with him, and left him to return at leisure to his den.

Prices Current in New York, March 16.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 11 a 13½; Upland, 10 a 12; Alabama, 10 a 12½. Cotton Baggins, Hemp, yd. 13 a 21½; Flax, 13 a 14½. Flour, American, 7 a S. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13 00 a —. Flour, N. York, bbl. 5.50 a 5.75; Canal, 6.12 a 6.37; Balt. How'd st. 5.50 a 5.87; Rh'd city mills, — a —; country, 5 50 a 5.62; Alexandria, 5.50 a 5.62; Fredricks'g, 5.37 a 5.50; Peters'g, new, 5 50 a 5.56; Rye flour, — a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. — a —; Rye, North, .80 a —; Corn, Yel. North, .65 a .68; Barley, — a —; Oats, South and North, — a —; Peas, white, dry, 7 bu. 5.00 a —; Beans, 7 bu. 8.00 a 9.50; Provisions, Beef, mess, 8.25 a 8.75; prime, 5.25 a 5.75; cargo, — a —; Pork, mess, bbl. 12.50 a 13.00, prime, 11.00 a 11.25; Lard, 7½ a .9.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals, — viz:

A Bull 5 years old, full blood, for	\$ 300
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1½ " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards. — A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$160.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.
Amer. Far. Office.

BENE SEED.

Just received at the American Farmer Office and Seed Store, a supply of fresh seed of the Bene Plant, so celebrated for its medicinal virtues in the cure of the summer or bowel complaint of children.

GRAPEVINES AND CUTTINGS.

For sale at the American Farmer Office and Seed Store, the following, which can be sent safely any distance:

ROOTED VINIS.

Herbemont's Madeira, two years old, 33 cents each, \$3.50 per dozen, or \$25 per hundred.

Isabella, very fine roots, two years old, 37½ cts. each, or \$4.00 per dozen.

White Scuppernon, one year old 25 cents each, or \$2.50 per dozen.

CUTTINGS.

Cunningham, finest native grape, both for wine and table, 12½ cents each, \$1.25 per dozen, or \$8 per hundred.

Woodson, very fine do. do. same price.

[For description of these, see American Farmer, Vol. xiv. No. 33.]

Norton's Virginia Seedling, fine, same price.

Cuttings of the Isabella, Muscadell, and Golden Chaselas, 50 cents per dozen. I. I. HITCHCOCK.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents.

GARDEN SEEDS.

Received by the ship *Gulnare* my usual supply of first rate GARDEN SEEDS, which I offer for sale, wholesale and retail, consisting of the various kinds of Peas, Beans, Cabbage, Radish, Carrot, Onion, Beet, Turnip, &c.

All that I need say to my customers in commendation of these Seeds is that they were raised by the same gentleman that for a number of years hath supplied those Seeds they have found so genuine, and that the present parcel has come to hand in fine order. To those unacquainted with these Seeds I would observe, that they are raised by a person of very great horticultural experience, and as I receive them direct from him there never has been or will be any mistake or deception in quality or kind of Seed. It is a fact well known to every experienced gardener, that the first rate English Seed produces incomparably better crops than can be obtained from Seeds raised in this country.

These Seeds are for sale at No. 78 Ensor (late Bridge) street, O. T. 2d door above the Town Clock.

SAMUEL AULT.

N. B. Orders from a distance with remittances (post age paid,) will be promptly attended to, if directed as above. Ma. 23—11

REMOVAL.

SINCLAIR & MOORE have removed their AGRICULTURAL REPOSITORY to the CORNER OF PRATT AND LIGHT STREETS, HEAD OF THE BASIN, where they offer for sale a general assortment of IMPLEMENTS, FEEDS, FRUIT TREES, &c. &c. Feb. 22.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville,) double Altheas, Honeysuckles, Corcorus, Lilacs, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

AGRICULTURAL IMPLEMENT AND SEED STORE.

J. S. EASTMAN, No. 36 west Pratt-st. keeps constantly on hand a supply of his Patent Cylindrical Straw Cutters of the various sizes, which he will warrant to cut as much, according to their size, and to be decidedly superior in every respect to any similar machine made in this country.

Also, very superior Rag Cutters, for the use of Paper Mills.

Gideon Davis' Improved Patent Ploughs, of all sizes, with wrought and cast shares, and all kinds of castings for those ploughs by the piece or by the ton, as likewise for horse powers, on as reasonable terms as can be had elsewhere.

Wheat Fans, Corn Shellers, Threshing Machines, Harrows, Cultivators, &c. Likewise superior Cast Steel Axes, Hay and Manure Forks, and Scythe Snaths at wholesale and retail. Shovels, Spades, Hoes, &c. &c. and all repairs done at short notice.

Field and Garden Seeds. Such Grass Seeds as are in market will be kept for sale. My assortment of Garden Seeds is not so extensive as advertised by some, but such as I shall offer for sale may be relied on as genuine. The following I could furnish at wholesale, viz: Superior Early York Cabbage, and Long Scarlet Radish Seeds, and Early Frame Peas, the latter raised by Richard Cromwell, Esq.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—A slight improvement has taken place in flour and wheat, owing to the opening of the spring business. The wagon price of Howard street flour is \$5 25; we heard of a few sales at higher rates, but they were for particular brands. Sales from stores have been made at our quotations. There is not much doing in grain, but what transactions have taken place have been within our quotations.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15 00; yellow and red, 9.99 a 15.00; yellow, 16 00 a 20.00.—Fine yellow, 18.00 a 26.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3 50 a 8 70. The inspections of the week comprise 42 hds. Md.; 30 lds. Ken.; and 1 hhd. Ohio—total 73 hds.

FLOUR—best white wheat family \$6.75 a 7.25; super Howard-street, 5.44 a 5.50; city mills, 5.37½ a —; city mills extra 5.50 a —;—CORN MEAL bbl 3 50;—GRAIN, best wheat, 1.05 a 1.10; white do — a —;—CORN, white, 58 a 60, yellow, 58 a 60;—RYE, 65 a 68 —OATS, 37 a 40 —BEANS, 75 a 80 —PEAS, 65 a 70 —CLOVER-SEED 5.00 a ——TIMOTHY, — a ——ORCHARD GRASS 2.00 a 2.25.—Tall Meadow Oat Grass 2.00 a 2.50—Herd's, 75 a 87½—Lucerne — a 37½ lb.—BARLEY—FLAXSEED 1.50 a 1.62—COTTON, Va. 10 a 12—Lou. 12 a 13—Alab. 10 a 11½—Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½—WHISKEY, hlds. 1-1 n. 28½ 28½ in bbls. 29½ a 30 ——Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russian, ton, \$200 a 215. Country dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37a 38; Plaster Paris, per ton, 5 00 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5 50 a 6.25.—Oak wood, 3.00 a 3.50; Hickory, 4 50 a 5.00; Pine, 2.25.

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Editorial; On Renting Farms; Improvement of poor low Lands, Inquiry, Fifteenth Volume.—Transplanting Wheat—To Wash Black Veils—Foreign Markets—Tenure, whether in Property or on Lease; Proprietors occupying their own Land; Farmers occupying Land; Rent, Proportion of Produce as Rent; Table of Rent on Arable Farms, Mode of Paying Rents, Periods of Payment—Essay on Rotation of Crops, by J. Hamilton Couper, read before the Union Agricultural Society; Rotation in French Flanders, in Norfolk, England, in Italy; concluded—On Planting—Mammoth Cotton Stalk—Communication from R. B. on the Culture of Asparagus; Culture of in Belgium—Large Pumpkins—Letter from S. on the Advantages of Penning Hogs, as well for the safety of Crops as for the Manure they would make—S. S. Griseom's Meteorological Journal for February—Curious Experiment on a Rattlesnake—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

Special Agents for the American Farmer.

The following persons are authorized to act as Agents for the American Farmer in their several places of residence:

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Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, MARCH 29, 1833.

NEW YORK STATE AGRICULTURAL SOCIETY.—We have heretofore neglected to notice the establishment of a State Agricultural Society in the state of New York. The plan of the society is a grand and imposing one. It contemplates the establishment of county societies as branches, and its officers are selected from among the *practical* husbandmen of the different counties exclusively. This we deem an important feature in its plan, and one essentially necessary to its permanence and usefulness; for practical men will not submit to take lessons on their professional concerns from those who are at best mere theorists, much less from those who are neither practically nor theoretically acquainted with the subject on which they pretend to give instruction. We have received a pamphlet from the society containing a number of valuable papers, which we shall occasionally lay before our readers. The following report on the subject of a farm school, will be read with interest, and we shall therefore make no apology for occupying an editorial page with it, to the exclusion of less interesting matter.

At a meeting of the New York State Agricultural Society, held at the Capitol, in the city of Albany, February 14, 1833.

AMERSE SPENCER, *Vice President*, in the chair.
JESSE BUEL, *Secretary* P. T.

Mr. Buel, in behalf of the committee appointed to report on the subject of an Agricultural School, read the following report, which was accepted:

The committee appointed at the first meeting of the society, to report a plan for an Agricultural School, with an estimate of the expense necessary to establish and put the same into operation; together with their views of such an establishment, beg leave to submit the following

REPORT.

The main objects of the proposed school are, to impart to agriculture the efficient aid of the sciences, and to furnish it with the best models of practice;—to teach, simultaneously, in the period of youth devoted to academic studies, the practical operations of husbandry, and such branches of useful knowledge as may tend to elevate its character, and increase its products. The *plan*, therefore, should embrace,—

1. A FARM, of sufficient extent to afford room for the diversified operations of tillage, cattle and sheep husbandry, and of orcharding and gardening—on a scale that will admit a fair comparison being made of crops, of breeds of cattle and sheep, and of the varieties of hardy fruits;—and sufficiently diversified in soil and surface as to admit of satisfactory experiments.

2. A FARM HOUSE AND FARM BUILDINGS, which may serve as models of convenience, taste and economy, and accommodate the head farmer and his assistants;

3. A SCHOOL BUILDING, for the accommodation of teachers and scholars;

4. A LIBRARY AND PHILO-SOPHICAL APPARATUS;

5. STOCK AND IMPLEMENTS for the farm; and,

6. SHOPS for the construction of farm implements and machinery, for the use of the farm; for the illustration of mechanical science, and to afford practical instructions to the pupils in mechanics.

These items of expense, which may be considered preliminary and permanent, together with the cost of the furniture required for the school building, are estimated at \$7,500.

1. The plan of education might embrace,—Practical instructions in the various operations and labors of the farm, the garden, the orchards and the shops; and,

2. The study of the natural sciences generally, mathematics, mechanics, chemistry and drawing, so far as these may conduce or become subservient to agricultural improvement,—together with such other branches of knowledge as will qualify the students for the higher duties of civil life,—such as will fit them to become independent electors, discreet jurors, faithful magistrates, and wise legislators.

As prerequisites to admission to the school, the pupils might be required to possess a good common school education, to be at least fourteen years of age, and of good moral character. Four years might constitute a course of studies; and the internal regulations and police of the school might be conformed, in a measure, to those of our military academy.

A department of the farm should be set apart for experiments in husbandry, and the details and results of these experiments accurately registered. The garden and the orchard should contain all the good hardy fruits, and specimens of all hardy plants, that may be useful on the farm, in the arts, in commerce, or that are ornamental,—in order that the relative value of different species and varieties may be determined, and their mode of culture, and process of curing, taught to the pupils,—and the approved kinds furnished for public distribution.

To put the school into operation there will be required,—a principal, professors and teachers,—a steward and servants, for the school;

A manager, laborers and assistants for the farm;

Machinists and assistants for the shops; and

A practical and scientific manager for the garden and orchard.

The number of officers and assistants which will be required, must depend upon contingencies; and of course the committee do not pretend to state with precision, in their estimate, the amount of their salaries and pay.

The proceeds of the school and the farm may be expected to increase for some years, and will materially depend on the terms of tuition. The committee have assumed, as reasonable data, that the number of pupils would average 200, and the average produce of the farm amount to \$4,000 per annum, for the first four years. Upon the assumed data, then, the estimate would exhibit the following result.

PRELIMINARY EXPENSES.

Farm of 100 acres, at \$50,	\$12,000
Farm buildings,	6,000
School buildings,	25,000
Library and apparatus,	7,500
Stock and implements,	3,150
Shops and tools,	1,250
Furniture for school,	1,150
Incidental,	1,500
Total preliminary expense,	\$57,550

ANNUAL EXPENSE.

Salaries of officers and teachers of the school,	\$5,100
Do. of manager and laborers on farm,	1,000
Do. of machinists,	600
Do. of gardener,	300
Expense of boarding 200 pupils at \$1.50 per week,	14,400
Servants for the establishment,	2,000
	23,400

Estimated annual expense, . . . \$30,950

The Annual Receipts are computed as follows:

Board and tuition of 200 pupils, at \$150 per annum,	\$30,000
Produce of farm,	4,000
	\$34,000

Thus the total expense of establishing the school, and of maintaining it the first year, is estimated at \$80,550, and the income, after the first year, it is believed, will be amply sufficient to defray all expenses.

Yet to meet contingencies that may occur, and to make up for any deficiency in the estimate, the committee think that an appropriation of \$100,000, the surplus to be invested for the benefit of the institution, will ensure usefulness and permanency to the school, and prove amply sufficient to meet all its wants. This sum, if equalized among the population of the state, would operate as a tax of about *five cents* to each inhabitant.

(To be continued.)

(From the Genesee Farmer.)

PRICKLEY ASH FOR HEDGES.

Lockport, 2 mo. 29, 1833.

I have been of the opinion that the Fraxinus, Prickly Ash, or toothache tree, as it is familiarly called, would make a hedge in all respects as good, if not superior, to any shrub now in use either here or in Europe. It, to my knowledge, thrives well on a clayey, or even sandy or gravelly soils, but best on rich moist bottom land, and is about as hard to subdue as are elders. As far as my knowledge extends, it is not infested with lice or worms, which are so destructive to the English thorn in our country. No blight affects it that I know. Has any one made trial of it for the above purpose? If so, will they please to favor us with the result of their experiment, and oblige one of the public, and perhaps many.

I. W. SMITH.

FIRE PROOF AND WATER PROOF CEMENT.—To half a pint of milk put an equal quantity of vinegar in order to curdle it, then separate the curd from the whey and mix it with the white of four or five eggs, beating the whole together; when it is well mixed, add a little quick-lime passed through a sieve, until it has acquired the consistence of a thick paste. With this cement, broken vessels, and cracks of all kinds may be mended. It dries quickly and resists the action of fire and water.

FOREIGN MARKETS.

LIVERPOOL, Saturday Morning, Feb 23.

We have now closed the fourth dull week in our Cotton market. The trade have continued to buy sparingly, and still seem determined to pursue the same course, in order to break down our prices. So far their success has been partial only. An eighth per lb. has, in several instances, been conceded to them; but these concessions not being yet general, we venture again to resume our former quotations for all kinds of American Cotton. Surat Cotton, however, went off yesterday by public sale at lower prices.

The whole purchased by the trade, except 500 bales on speculation. The chief sales in Upland have been from 7 to 7½, in Orleans from 8 1-3 to 7½, and in Tennessee from 6 8-9 to 6 7 8. [Strictly speaking we ought to take 1-8 off our quotations pretty generally, but we let them rest, till we see what another week may do for our market.]

LIVERPOOL, Feb. 18.

Our Cotton market remains rather flat, with little or no change in prices. The sales of the week were 15,530 bales.

LIVERPOOL, Feb. 23.

Cotton.—Sales of the week 11 180 bales, 500 on speculation; of which were 380 Sea Island 114 to 16d; 10 Stained 7½; 4150 Upland 6½ to 7½—12 at 8d; 2720 Orleans 6½ a 8½—17 at 9d; 950 Alabama 6½ a 7 3 8d.

There has been some fluctuation in our corn market, but prices remain pretty near the same point at which they stood some days ago. We quote United States as before—Sweet in bond at 21s to 25s and sour do. at 16s to 17s per bbl.

The sales of cotton this day about 2500 bales; no change in prices.

AGRICULTURE.

(From the Southern Agriculturist.)

ACCOUNT OF AN AGRICULTURAL EXCURSION,
Made into the South of Georgia, in the winter of 1832.

BY THE EDITOR.

It is one of the unfortunate characteristics of our climate, that danger attends all excursions into those parts of our country where the soil is sufficiently rich to reward the labors of the husbandman; hence, it is almost impossible in some parts for even the proprietor to superintend his concerns throughout the year, and consequently, at least for five months, he is under the necessity of confining himself to giving orders based on the reports of others, or at most, on an occasional and hasty inspection. There can be no doubt but this state of things materially retards our progress towards improvements, and gives to our plantations that air of careless negligence, which may be pardonable in a newly settled country, but which ought long since to have passed away from all of the Atlantic states. But although it is extremely dangerous to reside on a large majority of our plantations, yet fortunately it has been discovered, that settlements can be made in our pinelands, to which the planters can resort during summer and enjoy all the blessings of health, whilst at the same time they can visit their plantations sufficiently often to inspect all the operations carried on, and direct and control the whole. Such settlements of late have become numerous, and our planters have experienced much benefit from resorting to them. But whilst the planter residing at one of these pineland settlements, has it in his power to visit his own plantation and those in the neighborhood, yet he is confined by the inhospitality of our climate from extending his excursions into other sections of the country during this period, and seeing the operations as carried on there. Thus does he lose the opportunity of gaining much useful information, which his personal inspection, would enable him to obtain. All these visits, therefore, necessarily take place in the winter or early in the spring, at which time there is comparatively little to be seen and few occurrences take place to suggest new ideas or improvements.

Should a stranger visit us, he must do so at that season, of all others, the least inviting in the country, and when he does come, he sees but little from which he can form any opinion of our state of agriculture. It is only those who having been brought up among such scenes, and been long familiar with them, can detect differences in the modes of culture, or some of the other operations of the place, which may cause them to institute inquiries, and enable them to compare these with those they have been accustomed to. Still this is far from being satisfactory; yet, being the best we can do, we must rest satisfied with it. In the agricultural excursions which we have made, we have labored under some of these disadvantages, and if, therefore, they should not convey all the information which might be expected, we hope our readers will bear in mind, the seasons at which they were made, and the impossibility of making them at any other.

On the 24th of November, 1832, we embarked on board of the steamboat William Seabrook, and after a pleasant passage, arrived at Savannah the next morning at eight o'clock. We remained but one day at Savannah, intending to give this place a better examination on our return. Early on Monday morning we took the stage, and by evening were safely lodged in Darien. We saw nothing on this route worthy of special note. The road was most excellent, passing over a variety of soils.

From Darien we proceeded to "Hopeton," the residence of J. Hamilton Couper, Esq. and paid a visit to "Champney's and Butler's Islands." From whence

we proceeded to "Sapello Island," the residence of Thomas Spalding, Esq. and with a description of which place we intend commencing the account of this excursion, leaving the other places until our return, as we again visited each of them. A boat and hands having been kindly sent for us, we proceeded on the 4th of December, from the residence of Dr. Tunno, on Champney's Island to Sapello, a distance of fourteen miles, and which we reached a little after 12 o'clock. We ought, perhaps, to premise, that the Altamaha river for some distance from its mouth, is filled with islands, some of them of considerable magnitude, and most of them extremely rich. The river is wide even opposite Darien, or rather it is divided into several branches, each of which might be considered a good sized river. Darien is situated on the northern branch, and most of the rice plantations, which we shall have occasion to notice are either immediately opposite, (embracing all the branches of the river,) or a little above. Below Darien, the action of the sea water is perceptible. The islands are soon passed and nothing but mud banks, covered at first with coarse grass, peculiar to brackish water, and finally terminating in marsh, are to be met with. At its mouth the river is very wide from the northern to the southern side, which we shall have occasion to notice hereafter. The afternoon and evening of the day of our arrival, was passed in most agreeable conversation with Mr. Spalding, whom we were glad to find without company. The next morning we rode out to view the southern part of the island, occupied by Mr. Spalding, who owns a large portion of the island; the remainder is owned and occupied by Dr. Rogers, whose plantation we had not the time to visit.

Mr. Spalding's residence is situated at the extreme south end of the island, in a beautiful grove of live oaks. On passing from among these, the spectator who visits the island for the first time is struck with the peculiar appearance presented to him, instead of meeting with a thick growth of trees, such as is common on all sea islands on our coast, he suddenly finds himself in a prairie, extending to the north almost as far as can be seen, skirted on the east and west with a low growth of live oaks and other trees, whilst the intermediate space is broken here and there, with small clusters of trees. This island is situated at the mouth of the northern branch of the Altamaha river, and is about ten miles long and two and a half miles in its widest part; it contains about ten thousand acres above the flowing of the tide, made up of hummock lands, covered with live oak and pine, to the extent of two or three thousand acres, and at least three thousand acres of prairie lands, such as we have described, and which are considered fertile and are cultivated in cotton and corn. This land appears to be made up of what seems to be a rich vegetable mold, in some places, six feet deep, resting on white sand. In its uncultivated state, it is thickly covered with various grasses and affords a fine pasturage; but when under culture it becomes so friable, that it is impossible to ride in the fields, except in the tracks beaten hard, by the negroes passing and repassing. The attempt to ride in any other part would be attended with great inconvenience if not danger, as the horse would immediately bog. We are not aware whether this is the case during summer, when the soil has been dried by the sun, but was certainly the case in those fields we rode in, which were at the time somewhat, in a moist state.

In our morning ride we passed through a considerable portion of this prairie land, and visited the fields of sugar cane and cotton, and the establishment for manufacturing sugar, consisting of mill, boiling and curing houses, all made of tabby. These are all at a distance of at least three miles from the mansion, with the exception of a small cotton field near the house. The intermediate space is principally prairie lands. On our return, we retired to the library, and as the day was disagreeable, we employed ourselves

in obtaining the following particulars from Mr. Spalding, which we noted down at the time.

"The agricultural products of this island, are cotton, sugar, corn, &c. On this island was the first cultivation of cane for the production of sugar within the Atlantic states—here the growth of cane for that purpose was begun in 1806, and has been continued ever since. The product of sugar could not be taken for the last twenty years above 700 pounds. In cultivating cane, the land is formed into low ridges, occupying the space of five feet; a broad trench is opened along the centre of the ridge, into which are laid two continuous strings of cane, four or five inches apart. It is covered two inches deep. As early in March as possible, (the time of planting having been in January and February,) the earth is loosened over the cane plants, so as to give greater facility in their coming up; and the carts having been employed after the completion of the crop, in carrying out and depositing in every quarter of an acre, such manure as may have been gleaned from the cattle pens and other ways, the smaller hands, if there has been any interval of time for the operation, are employed in strewing some small portions of manure, over the ridges ahead of those employed in loosening the soil. If we have not had time to perform this operation, before the first stirring, we rarely can accomplish it before the first of June, for our other crops begin to press upon us soon after the beginning of March. In preparing the cane land and planting it, we may take in round numbers for listing, bedding and planting, sixteen laborers to the acre, exclusive of a few old hands employed in stripping the cane plants and examining them, and the carters who are employed in taking them from the field where they have been deposited in autumn, to those fields which are now prepared for their reception. It may be understood in the general, that such is the temperature of the climate of Sapello, that it is the tops of the canes that have been previously manufactured and not the bodies that are employed for seed of the next year. This course is not generally pursued in Georgia, elsewhere than on Sapello, and is sometimes attended with loss even there, as was the case last winter. We give the sugar cane after the first operation in spring, of loosening the soil over it, the same number of hoeings we give our cotton fields, with the same expense of labor. This, however, is a bad course, the plough appears to be peculiarly adapted to the sugar cane, it opens and pulverizes the land at that season when it particularly requires it, much more radically than the hoe can do; local causes have prevented its introduction on this island.

"The cane juice has generally reached seven degrees of Beaume's hydrometer by the first of November, the blue ribband cane sometimes by the fifteenth of October. Whenever this is the case, your harvest should begin, the earlier the better, because the sooner you begin, the more time you have for the deliberate manufacture of your sugar, a matter of no small moment in the operation, and again, because severe frost sometimes deteriorates your juices from the seventeenth to the twenty-fourth of December. Fifty hands are employed per diem, in taking in and manufacturing from two to three acres of cane, according to its qualities; twenty hands are employed in stripping, ten hands in chopping or cutting down, ten hands with carts and loading of carts, and about ten hands about the mill and boiling house, of course the carters and out-hands render some assistance at night to those in the boiling house.

"Having found from long experience that a vertical cattle mill would not express the juices from the blue cane sufficiently, and not finding it convenient to procure a steam engine for the purpose, it was determined to erect a horizontal water mill, excavating for the purpose about five acres of marsh land, eighteen inches below the surface of high water, so as to be able to work with neap-tide, a few hours. This mill is connected to the water-wheel simply by a coup-

ling box, and will be all sufficient in common seasons, to take off from one hundred to one hundred and fifty acres of canes; this mill with its coupling apparatus, was delivered from the West point foundry, for twelve hundred and eighty-six dollars, payable in six months.

"There is nothing new to be added on the subject of preparing sugar to what has been already written. We are in hopes of improvement, but must wait for the result. It may, however, be interesting to know, that the sugar cane has travelled up the Altamaha river, and its tributary streams from Darien to Milledgeville, and from Darien to Macon, until every log house in this place has its sweets in abundance. However poor the individual may be, however limited his labors, some portion of this labor is set apart for this purpose. His little wooden mill and his pots set in clay; give him comforts which a few years back he little dreamt of. You may sometimes see the younger branches of the family at the end of a long lever turning the mill, while the elder are supplying it with cane, carrying away the juices and boiling it into syrup or sugar. A few years back small stills were common to be seen through the country; the peach orchard being almost the only object of luxury within their reach, now the still has given place to the sugar mill and sugar boiler, and the exchange must assuredly be beneficial to the people."

It is very gratifying to learn that the sugar cane has extended so far, and that it is likely to prove so beneficial as we are informed it is. The cane is cultivated, we understand, to a considerable extent, in the interior of Georgia, commencing from the sea-board; that is, scarcely a farmer is now found, who has not a small patch—even the pine land, if well manured, produces sugar of an excellent quality. We beg to be understood, however, as stating that it is not grown as a crop, but merely to supply their own wants, for this purpose it can be cultivated, but would be a losing business if attempted on a large scale for market.

Mr. Spalding has partly erected, and will have in operation during the next season, a set of works for boiling sugar in vacuum, which will enable him to manufacture it of a superior quality, as it has been satisfactorily ascertained, that the improvement, by this process is very great.

The varieties of cane cultivated on this island are the red (sometimes called the "blue") ribband, the yellow ribband, and the Otahettie. The first yields the richest juice, but is so hard as not to be easily crushed, and therefore wooden rollers cannot express all the juice it contains. The second yields more readily to pressure, but is so tender as to be easily destroyed by frosts; the third yields more juice than these, but contains less saccharine matter than either. Mr. Spalding having communicated through the *Agric. Cultivator*, at different periods his mode of manufacturing sugar, we will not detail it here, but refer our readers to these communications.

In the course of conversation, Mr. Spalding gave us the following account of the early culture of sea island cotton, and his present mode.

"Having been an eye witness, although very young, to the first introduction of long staple cotton into the United States, the changes the cultivation has gone through, are distinctly in remembrance. The cotton plant growing large, particularly on its first introduction into new soil, it was believed that it required great space to extend its limbs in, and to ripen and perfect its fruit. It was not known, that like all other oily seeds, vegetation is a little doubtful, and the plant when first coming up peculiarly tender and subject to many accidents. Unaware of these circumstances, the first cultivators deposited their seed in holes made on the surface of the fields at from five to eight feet each way. The consequence was, that even in the best soils scarce a fourth of the fields were covered with vegetation—the crops could in the nature of things under such circumstances be, but

very small. The ridge husbandry was but little known in any country at that time; in truth, modern agriculture owes its introduction to Tull, but his books and his system passed but slowly through his own country, and reached this at a still later period. The first application of the ridge husbandry to cotton ever remembered, was by Mr. Couper and Mr. Spalding the elder, of St. Simon's, and at St. Simon's. Still, although more of the seeds deposited in the earth grew, the old prejudice, of the plants requiring great space remained, and the product from even the best lands was limited. Accident brought a Bahama planter in the year 1794, to Georgia, he was a respectable kindly old man, who wintered with some of the cotton planters of that period. He was advising all of them to plant their cotton a great deal thicker; none of them, however, would take his advice or opinion, except a very young man commencing his operations on the south end of St. Simon's Island, who adopted it in its fullest extent—he drilled his cotton along the ridge; he left the stalks to stand at every six inches; he adopted the West India mode, and tilled it at from twelve to sixteen inches in height. The soil was very fine and new; the season was favorable; the crop was limited to sixty-five acres;—the result was three hundred and forty-one pounds of clean cotton to the acre. The revolution in the culture of cotton was wrought, every planter on St. Simon's Island followed the example of drilling, and leaving the plants to stand within six or eight inches in the row. From that period, viz. 1795, the same system has been pursued on St. Simon's, with, perhaps, as great results as to the quantity of cotton, as has been met with in any other part of the southern states.

"The cultivation on Sapello does not differ materially from the course that was pursued on St. Simon's; perhaps the ridges are made a little higher than they usually are elsewhere. The only novelty in the cultivation on has been in making the ridges in prairie or low lands, permanent and unchangeable for a series of years. The cultivation in that description of land is continuous, alternate rows of corn and cotton occupying the field, and the corn succeeding to the cotton alternately each successive year. No one ridge, therefore, is occupied by corn or cotton more than one year; and where the soils are rich and deep enough, whether they be the clays of our river lands, or the vegetable deposits to be found in our prairies or swamps, the system appears equally available, and in either of those lands without some extraordinary cause intervening, twenty bushels of corn, and one hundred and fifty pounds of cotton might reasonably be expected from the acre—neither the growth of the corn or the cotton, has been sensibly affected, either in the river or the prairie lands, by the beds having continued permanent for eight years, while much labor is unquestionably saved, by being exempt from throwing up of heavy ridges every spring. But this is not all, the lands from being turned over every year, whether they be clays of the river or the vegetable molds of the prairie, become too light and too easily washed down, and waste away by the heavy rains of summer, and as it is believed, more readily produce blue cotton, or large stalks without pods. Our operations on these lands is in the spring, to list down as light as possible the weeds that spring up in the months of February and March, so as to clean and bare the ridge. The ridge is then carefully trenched, and whether planted in corn or cotton, the seeds are dropped along this trench and covered over and trod down carefully with the foot. If the cotton grows very luxuriantly in the land, it is thinned down to about a stalk in every ten inches. The corn is left, if it can be done at ten inches apart in the trench, so that we have in fine, quite as many stalks of corn for our half crop as planters generally leave for their whole. But we have great evils to dread in both these descriptions of lands in setting our crops in the spring, the cut-worm as regards cot-

ton, and the cut-worm and the rats as regards corn. The best remedy found for both of these evils has been soaking the seeds of both corn and cotton, to give them as quick a germination as possible, then allowing them simply to dry, pouring over both the cotton seed and the corn, a mixture of lime water, stirred up into a whitewash. When this operation has been well performed so as to coat over the seeds with the whitewash, we have thought it almost a radical remedy, but it requires care in the operation, or it is in a great measure useless. As early as possible after the corn and cotton have reached three or four leaves, we dress up with care our ridges, cleaning up the intervals. Upon lands of this description, though commonly planted a little later than higher lands, the period of cleaning and hoeing ceases at the same time, which is with us generally about the first week in July."

The cotton receives four hoeings, not including the drawing down preparatory to planting—they are all light, never deep and always upwards—the top of the ridges or beds are wide, and the plants instead of being placed in straight rows, (as is usual in South Carolina,) are scattered over the whole surface, and thinned out to from six to twelve inches, leaving them still without regularity. The thinnings are not begun before the plants are about six inches high; but when commenced are continued until the plants are left at the distance intended; care is taken that the final thinning shall not take place until the heavy rains in May have set in, sometimes it is not finished until the first of June. On the prairie lands, the growth of the cotton is from four to eight feet high—it is lower on the hummock lands, which are quite sandy. The finest quality is produced on the former.

Mr. Spalding keeps on this island four hundred and fifty head of cattle, of which ninety are working oxen. These have been regularly herded during the day, and penned at night for the last ten years. The manure thus acquired is all applied to the sugar cane crop. The oxen were formerly used for the sugar mill and carting, but now are employed in the carts only. The other cattle are kept merely for plantation use. No sheep are now kept on the island. A large flock was brought down and promised well, but were all swept off by the gale of 1824, which overflowed the island, doing considerable damage, from which the land has not even yet recovered.

We were shown a large grove of orange trees, and some date trees, both in a very unpromising state. The orange trees had been very much injured by the severe frosts of 1830, '31 and '32, most of them have been killed to the surface of the ground, and many entirely. Previously they had promised well, and were generally about from fifteen to twenty feet high. One or two date trees only had grown to any size, the situation did not appear favorable to them.

On the afternoon of the 6th of December, we left Sapello, for St. Simon's Island, of which we will, in our next, give such information as we collected.

(To be continued.)

(From the Southern Agriculturist.)

ON MANURES.

Georgia, Columbia county, October 25, 1832.

Dear Sir,—A long and severe illness has placed it out of my power with any satisfaction to myself, to comply with your request at a more early period. Permit me, sir, to assure you, that no one feels a more lively interest in our agricultural prosperity than myself; and any thing that I can contribute that is calculated to aid your undertaking, is at your service. The only reluctance I feel in appearing in the character of an agricultural essayist, arises from the conviction of my want of experience on the subject. I hinted to you in a former communication, that I was a young planter, and consequently any observations that I may make are entitled to but little respect. For I think it is only after long and patient inquiry

that we may deem our results of sufficient importance to present to the consideration of the public. Premising this much, the following remarks can be taken for what they are worth.

Since the principal part of the grounds in the immediate neighborhood of the stables have been manured, I have thought it most advisable to place the cowpen on the field intended to be manured, to diminish the distance of carriage, which is a matter of considerable importance. This year I changed my cattle from their former to their present pen, about the middle of July. Two oxcarts and two wagons, with a proper number of hands were employed in collecting the first layer of leaves; since then, one wagon with three good hands have been almost constantly engaged in supplying the pen with leaves, swamp mud, &c. My plan in forming my compost is, to lay down first a layer of leaves and weeds, or corn stalks, and then a layer of mud. When it has been sufficiently saturated with the dung and urine of the stock, it is well mixed together by ploughing it once or twice, or even three times, if necessary, I then commence forming another layer, and so on. You may form some idea of the industry I have used in collecting my materials, when I inform you, that I have from the middle of July to the present time hauled into my cowpen, between fourteen and fifteen hundred wagon loads of leaves, and that at the same time I have kept my stables well littered. I have not as yet made use of cotton stalks, preferring corn stalks on account of their being of a more porous nature, and of course better calculated to absorb the moisture of the farm pen, but if greater industry should carry me beyond a sufficient supply of those materials, I shall undoubtedly resort to them; for I am confident but few things are better calculated to be substituted in their place.

The number of cattle penned, amount generally to forty-five head of cows, and seventy of sheep. My sheep, I have not been in the habit of penning till latterly, being under the impression that it was an injury to them. So far, however, I have discovered no injury to arise from it, and I will continue the practice until I have some positive evidence of its bad consequences; for their dung is of great importance, and if possible, they should be made to contribute their share in the improvement of the land. The oxen are stalled when at work, and well fed on pumpkins and pea vines, and when the labor is hard, a portion of corn meal is added, which is mixed up with cut stalks or rye straw. I have for the last two or three years stalled a few milch cows, treating them as I did my oxen; but the increase of milk was not as great as I expected, owing, I think, to a deficiency of succulent food. I am in hopes this winter to be able to remedy that evil, as I have three acres and a half of turnips, which at this time look very promising. One-half are ruta baga; they were drilled with a turnip drill on ridges two and a half feet apart, the ground having been previously put in good order by frequent ploughings, it was also well manured. My stables, as I have observed, I keep well littered; I clean them out every ten or twelve days, removing the dung immediately to the field, if it is ready for its reception. If not, I place it in rail pens in the yard. When horses are managed in this manner, the quantity of manure they make greatly exceeds the calculation of those who are in the habit of permitting them to stand month after month on their dung, without allowing them a fresh bed of straw or leaves. If the accumulation of manure is not a matter of sufficient importance, the life, health, and comfort of the animals deserve to be considered. For I am confident that many of the diseases which afflict horses are caused by the filthy or negligent manner in which they are kept. But every means in our power should be most diligently used to obtain the greatest quantity of manure. It has been emphatically called the farmer's "gold dust," and the distinguished author of "Arator," has declared that "the

agriculturist who expects to reap good crops from neglecting his manures, is equally a fanatic with the religionist, who expects heaven from neglecting his morals." "The true secret in carrying on this business to advantage, is to make it at once a distinct and separate concern, and one worthy of attention." It should be pursued with an energy equal to its importance; by no means delaying the cleaning out your stables to a rainy day, or permitting your cowpen, or hogpen, to suffer for the want of those materials, without an abundant supply of which, their dung is of but little profit.

The sterile aspect of the country, both in Georgia and South Carolina, indicates too truly our wretched system of agriculture, and the necessity of an immediate change if we wish to preserve the little remnant of fertility still left in our lands. It is useless to think of cultivating the grasses until our lands are rendered sufficiently good to produce them to advantage. It is equally useless to attempt to improve our stock by the introduction of fine animals, until we have pastures to support them, and the means of procuring for them, an ample supply of winter provisions. The basis then of all agricultural improvement, is a liberal system of manuring.

"Without fertility of soil, labor cannot be rendered effective or good crops obtained; for of what avail is any rotation of crops, the best contrived implements of husbandry, or the most perfect use of those implements, when applied to a barren soil. Fertility of soil is the capital from which all profits in agriculture must be derived. Manuring only, can recover this capital so much of which is already wasted by bad husbandry."

I know it has been frequently stated by writers on this subject, that slave labor is unfriendly to every thing like good tillage. By what train of reasoning they arrived at this very ingenious conclusion, I do not exactly recollect; but I think one of them points to our deserted old fields growing in broom sedge and briars as an evidence of the fact. I am ready to admit there are but too many proofs of our slovenly system of agriculture, and the one just mentioned stands at the head of the list; but it is no evidence of our inability to do better. Every thing depends upon the intelligence and industry of the individual who directs the labor; if he choose to employ a part of it in the making manure, I should be glad to know what is to prevent him. Five or six years past, when I first read the essays of Agricola, I was somewhat surprised at the assertion, that one acre could be as easily manured as one could be cleared. I say, I then marvelled at its absurdity; but greater experience in those matters has convinced me of the truth of the observation. If then, it is an admitted fact, and I believe it almost susceptible of demonstration, the question will at once present itself, why do we see so many flying to a new country to fell once more the forest? I will not attempt to describe the various motives by which no doubt they are actuated.

I, sir, have no permanent interest in the operations I have been directing, for the last few years; but it seems to me that if I were surrounded by those comforts which time alone can procure, I would not rashly abandon them to take up an abode in the wilderness, deprived at any rate for a length of time, of all those pleasures which long settled countries alone can afford. There is a genuine satisfaction too, in the breast of the true lover of rural life in causing fertility by his skill and industry, in place of sterility which the man cannot feel who works among stumps and fallen trees.

I promised to give you an account of my cotton crop grown on my manured land this year, provided it was worth recurring to. I will conclude the communication by doing so. Notwithstanding the season has been quite unfavorable for our cotton crops in this part of the country, its product will be quite fair. It is not all yet picked out, but enough has been gathered to convince me that it will make at least twelve

hundred pounds of seed cotton to the acre. There is no land to clear on this plantation, nor are there many uncleared acres in the county in which I reside capable of such a product. Had I wished to clear land, I could not have taken in more than thirty-five or forty acres with the force we employ, and have given to the other departments their proper share of attention: I manured about thirty acres this year. So I have almost accomplished already what I once looked upon as absurd, and I am not yet a master in the art of making manure. When land is to be cleared, it is necessary to employ the whole active force at command, not so in the making of manure. The labor generally necessary is scarcely missed—it glides on so smoothly when it is made a separate and distinct business, and one worthy of attention." W. A. G.

(From the New England Farmer.)

MANURE FOR GRASS LAND, TOP DRESSING.

It is wrong to attempt to take many crops of hay from any piece of upland without affording it manure: and although, as a general rule, it is best to break up, and take arable crops from land when it is manured there are important exceptions to this rule. Mowing land may be too wet, or otherwise unfit for the plough; and though much manure is wasted, when applied to grass land by its washing away by rains, and giving its fertilizing gases to the atmosphere instead of the plants it was intended to nourish, still there may exist cases in which its application to the surface of grass lands may be advisable. Mowing land in such cases, should, once in two or three years, have a top dressing of some manure suitable to the soil. Gypsum or lime well pulverized will be well applied to clover growing on a dry soil. "Gypsum," says the Farmer's Guide, "generally benefits all broad leaved plants, such as corn, potatoes, and most of the grasses. It is also good for young fruit trees. On grasses the best time to sow it, is when vegetation starts in the spring, at the rate of one bushel per acre, and the same quantity immediately after haying. Plaster has no effect on moist lands, and it has been thought not to be beneficial near the sea, but from some experiments, it appears that its operation depends more on the nature of the soil than its nearness to the sea coast."

Dr. Deane observed "If the application of top dressings to mowing ground were generally practised, and repeated as it ought to be, instead of the general, or rather universal neglect of it, it would put a new face upon things. A vast plenty of hay, double crops, two cuttings in a year, and much increase of wealth to farmers in general would be the happy consequences." Sir John Sinclair, recommends top dressing a growing crop, when it is suspected that the land is not rich enough to bring a full crop to perfection, and directs that this should be done as early in the spring as the land becomes sufficiently dry to bear the treading of a horse without poaching; and after the manure has been applied, the land should generally be harrowed or rolled. Soot, ashes, and other light manures are thus most advantageously disposed of.

Loudon says, "The roots of perennial grasses, whether fibrous or creeping, never strike deep into the soil, and thus deriving their nourishment chiefly from the surface, top dressings of well rotted manure, repeated on the same field for centuries, form at last a thin black stratum among the roots of the grass, which produces the most luxuriant crops."

Most agricultural writers as before intimated condemn the use of barn yard, stable or putrescent manure on grass land, because it is apt to be washed away, or to become dried matter of little value by exposure to the sun and air. Undoubtedly manure of this kind will, generally, prove more serviceable when ploughed into the ground and used for corn, potatoes, &c. but in many cases it is not bad husbandry to use the strongest sorts of dung as top dressings for

grasses. An English agricultural writer, whose works are well esteemed, says, "There is scarcely any sort of manure that will not be useful when laid on the surface of grass grounds; but, in general, those of the more rich dung kinds are most suitable for the older sort of sward lands; and dung, in composition with fresh vegetable and earthy substances, is more useful to the new lays, or grass lands. In Middlesex it is the practice of the best farmers to prefer the richest dung they can procure, and seldom to mix it with any sort of earthy material, as they find it to answer best in regard to the quantity of produce, which is the principal object in view; the cultivators depending chiefly for the sale of their hay on the London markets. It is the practice to turn over the dung that is brought from London in a tolerable state of rottenness, so as to be in a middling state of fineness, when put upon the land. It is necessary, however, that it should be in a more rotten and reduced state when used in the spring than when the autumn is chosen for its application."—*Dickson's Practical Agriculture*.

With regard to the season at which manure should be applied to mowing ground, a great difference of opinion prevails among farmers both in Europe and America. Loudon says, "In the county of Middlesex, where almost all the grass lands are preserved for hay, the manure is invariably laid on in October, while the land is sufficiently dry to bear the driving of loaded carts, and when the heat of the day is so moderated as not to exhale the volatile parts of the mass. Others prefer applying it immediately after hay time from about the middle of July to the end of August, which is said to be the "good old time," and if that season be inconvenient, at any time from the beginning of February to the beginning of April.

The Farmer's Manual directs to dress [in March] with stable compost, hog-pen, or such other well rotted manure as you have, such grass grounds as you have neglected in autumn; three loads now may be equal to two then; but it is best to secure a good crop even now. Your winter grain should now be dressed with plaster, if it was neglected at seed time; your mowing grounds, which are on a dry soil will pay you well for a bushel or two of plaster, or a few bushels of lime or leached ashes to the acre. A mixture of lime and ashes, plaster and ashes, or of all those ingredients has also been recommended.

Previous to manuring your grass land it will be well to harrow or scarify it. Rolling has been recommended to smoothe and consolidate the surface of grass ground, prevent the formation of ant-hills and render the effects of drought less pernicious. But scarifying or tearing the surface with a harrow is better, as it opens the ground to admit manure to the roots of the grass; and thus the force of the objections to the application of putrescent manure on grass ground is in some degree obviated. After this process it is often advisable to sow grass seeds to produce a new set of plants and supersede the necessity of breaking up the soil to prevent its being "bound out," as the phrase is.

(From the Genesee Farmer.)

HOW TO CHEAT THE MOON.

Some farmers are very careful to sow their spring crops and gardens at a proper time of the moon, and thus frequently anticipate or pass over the best season of the year. By attending to the following directions, they will escape all the inconvenience arising from the influence of the moon.

Select some fair day, as near the usual time of sowing as possible—arise very early in the morning, and sow your seed boldly. Cover all up carefully before night, making the land appear smooth and even. When the moon comes on the next evening, she will not be able to determine whether the field has been sown or not, and will therefore bestow no influence upon it, either bad or good.

It is important that the land be thoroughly dried, so that it can be made to appear natural.

Whenever wheat turns to chess, it is done by the influence of the moon. By attending to the above directions, and sowing clean seed, that evil may also be avoided. P.

HORTICULTURE.

CULTURE OF THE VINE.

MR. SMITH: *Baltimore, March 20, 1833.*

For some years past my attention has been drawn to the cultivation of the vine, as the means of giving to our country a new agricultural product, which, supplying the farmer with a wholesome beverage, and adding to his resources, may take the place of whiskey with the generations that are to come.

I have reluctantly convinced myself, that we shall never be able to produce from our native vines, in this latitude, a wine that will be fit to drink—and indeed, I may say that it has never been my lot to taste a sample of wine from our grapes, which could give place for hope. On the other hand the severity of our climate, during the winter and spring months, proves fatal to almost all imported varieties. I have sought, therefore, with great earnestness, for a foreign vine which combines the hardihood of some of the Rhenish vines, with those qualities which are necessary for the vat. That *desideratum* has, I think, at length been found in the Herbeumont Madeira or Warrenton grape. In No. 50, vol. xiv, of the *American Farmer*, Mr. Thomas McCall, of Georgia, has traced it satisfactorily to a foreign origin, and it indeed possesses many of the qualities of the best foreign wine grapes I have ever seen. It is an abundant bearer, the bunches are generally perfect, and if left to become quite ripe it is not unlike in flavor and appearance, the Miller's Burgundy.

In the spring of 1831, I received from Mr. Herbeumont five hundred roots, very well put up and in the finest condition. I had them carefully planted at eight feet apart one way and six the other, and pruned to two buds each. The growth of the vines was very luxuriant and beautiful. Nothing more was done but to keep them free from weeds and tie up the leading shoots. The wood ripened well, and no further attention was paid to them until March, 1832, when they were again pruned to three or five buds each. Two only had died; and these were indifferent plants through the summer. I consider this a sufficient proof that they will stand our winters, for that of 1832 was severe.

They were again pruned about ten days since; I have carefully examined them, and perceive throughout that perfect *compe*, which to a French vigneron is a sure indication of health and promise.

I have reason to believe, that I shall be able this fall to make some barrels of wine as an experiment. Z.

(From the Genesee Farmer.)

VEGETABLE PHYSIOLOGY.

TO CHECK THE GROWTH OF FRUIT TREES AND PROMOTE THEIR FRUITFULNESS.

MR. EDITOR: You inquire, "what will check the too free growth of fruit trees, so as to produce fruit buds, flowers and fruit? and if separating a part of the roots from the stock would produce the effect?"

These are important inquiries, and I will try to answer them, my own experience having fully illustrated the example stated, and its remedy.

In order to a full understanding of the subject, we must inquire:

1. Into the cause producing the effect, viz: the too rapid growth of the wood, and its consequent unfruitfulness; and

2. The legitimate and physiological treatment necessary to obtain the desired result.

Trees, and in fact all vegetables, have, like animals, three distinct periods of existence, viz: youth, maturity and decay. Youth may be termed that period in which the tree is growing to a bearing state, the time consumed for which depends much on its treatment and kind. Maturity is the term in which it yields its fruit; and decay, finally, but almost imperceptibly, follows sooner or later, and at last puts an end to its existence.

These three states, or periods, may be measurably retarded, or accelerated, by artificial causes. The young sapling, healthy and fresh from the nursery, planted into a kindly soil, and cultivated with attention, throws out and expands its vigorous shoots for many years. It finally, although it may seem a protracted time, arrives at its bearing age, and yields its annual supply of fruit, bountiful in proportion to its stature, and through a succession of years proportioned to its former term of youthfulness; and even age, as come it finally must, seems hardly willing to arrest its bounty, and lingers with tardy pace ere its withering hand is laid upon it. This I conceive to be the most natural and profitable course of all fruit bearing trees. I know that many people are in great haste to have their fruit trees yield their long expected reward, and in constant expectation of receiving it, have cultivated and treated them with much care. They are, to be sure, highly gratified in their exuberant growth, and if in a few years they do not yield a corresponding supply of fruit, are often apt to complain.

Now, on the true principles of vegetable physiology, the complainers are erring, and the tree right. They, for the purpose of getting fruit soon, stuff the tree with vegetable nutriment almost to repletion. The tree, in its turn, understanding well its own proper functions, thrives apace, intending at a proper time, to pay principal and interest for the kindness thus heaped upon it, and which it assuredly will do if suffered. But the owner is impatient for his fruit, and prunes and nurses the tree, wondering why it does not yield him fruit, and perhaps even threatens to destroy it for its perverseness. The simple fact is, the tree is not ready. It has not arrived at maturity, and is prevented from yielding fruit from the very nourishment and fulness continually received from the hand of its cultivator.

This I assume to be the natural state of the tree. But the object, as I infer from the questions at the head of this article, is, to obtain the fruit before the tree arrives at maturity, or, more technically, to force it.

The question now recurs, will you remedy it by cutting off a part of the roots?

By no means. The tree has no more roots than are necessary for its support, and would be much injured by parting with a share of them. Besides, I am unable to account, on physiological principles, how the cutting off a part of its roots will throw fruit buds into the top of the tree. The production of flowers and fruit require as liberal supplies of sap as that of wood, and if the source of supply be cut off, viz: the root, from whence is the supply to come?

But I proceed to consider the second inquiry, to wit: "to check the exuberant growth of wood, and cause it to produce fruit buds, flowers and fruit."

I shall assume that the trees are of well known kinds, and whose bearing qualities have been tested, and that they are situated in an open and well cultivated ground, as I believe the *whole* complaint can be made under no other circumstances. The trees have also been well pruned, and are accommodated with a good shaped head for bearing, and of fair size. My answer is: *Lay your ground, on which your trees stand, well down to grass, and let it remain so for several years.* The next year after seeding the ground, the growth of young wood will be much diminished, and fruit buds will form in moderate quantities; flowers and fruit will follow the next season. That year, if the tree be an annual bearer, an increased number

of fruit buds will be found, and so continue in annual succession. If, after a few years, the tree is too stationary in its growth, for it certainly will not throw out young wood very rapidly, plough, and cultivate, and manure the land, and you can supply the trees with any amount of young wood required, although the bearing will still continue in an abated degree. If you find your trees get too thrifty, you have only to seed down again, and manage as circumstances may require.

That this method has been tried with success I know, for I did it myself some years ago, and am indebted partly to accident for the discovery. About the year 1817, my father had an orchard which, when planted, nearly surrounded his garden, and which was used mostly for mowing ground. The trees were young, perhaps fifteen years old, and had grown tolerably well. A few years before the time I speak of, the garden had been enlarged on two sides, which took, on each side a row of apple trees within the fence. The land being well cultivated, the trees grew astonishingly; and not being pruned, acquired immense heads, and bore little or no fruit, while those in the meadow, although of much less size, bore abundantly. I was then a boy of eighteen years old, and the trees were delivered over to my care, "to prune into good order." I had read "Perry's on Fruit Trees," and supposed I knew all about it; so at it I went, with the ax and saw, and took out full one-third of their tops, supposing that they would now go to bearing at once. But not so. They grew as before, and bore a little better than they had done. I confess I knew not what to do, although, if I had let them alone, they would have borne, when "their time come," all the better for it; yet I was impatient for their fruit. At length the plan suggested itself to seed down the ground where they stood to grass. It was done, and in a short time the growth was nearly stopped, and they bore abundantly of the finest apples.

They are now, for I saw them two years since, much the finest of all the trees in the orchard, from the benefit of having a rapid growth in their youth; and the others, from growing less rapidly when young, and bearing so much sooner, have a much older appearance, and were the ground in which they stand not occasionally ploughed and cultivated, would soon bear evident marks of decay.

This matter now must be accounted for on rational principles, and it may truly be hard to compel a person to say what makes the tree bear wood one year and fruit the next, when the whole process is hidden in the earth, and a profound secret of nature. I will, however, state my own opinion, and others may judge of its correctness.

While trees are young, their roots expand and run near the surface of the earth. If the ground be cultivated, the earth is warm and light, and the roots absorb much nourishment, and a rapid growth of young wood is the sole consequence. In process of time, as the tree increases in size, the roots find their way deep into the earth, where the temperature is lower, and its growth is by degrees checked; fruit buds are consequently formed, and the tree comes into the bearing state. Now, putting land into grass has the same effect. The sun is hidden from the earth. The temperature is lower—the richer nutritious gases of the soil are absorbed by the grass, and the same result is produced as if nature's age had forced the roots more deeply in the ground. ULMUS.

(From the Genesee Farmer.)

MEMORANDA IN VEGETABLE PHYSIOLOGY.

PLANTING.

Extract.—"The pith forms the central circle of a root, stem or branch. It is a cellular membranous body of a silvery white color. As the tree or root advances in age, and the timber is perfected, the pith gradually loses its original spongy texture, the cells of which it is composed becoming more and more compressed, until all appearance of it is lost in the wood, excepting that the concentric circle which it occupies appear whiter than the other annual layers. But although the pith thus disappears in the old, it still continues in progress with the young wood of the root, stem or branches; and the periodical fibres or radicles of the former, and the buds or embryo branches of the latter, will on examination be found to originate from it. When a branch is pruned off close to a stem, wherein, from age the pith has disappeared for some distance above and altogether from below the origin of the amputated branch, *no reproduction of shoots takes place, in whatever season the pruning may be performed*, but should a portion of the branch be left to the stem, from *that* buds and shoots will spring. It also happens, that when a branch is pruned off close to a young healthy stem, containing perfect and active pith, before or shortly after the completion of the midsummer growth, which usually takes place before the end of July, *no production of shoots follows the operation*, but the effort of the vital functions of the plant appear to be wholly directed to *cover the wound with fresh bark*. Should the pruning however be performed in spring, before or shortly after the expansion of the leaves, or after their fall in autumn, *a reproduction of buds and shoots ensues*, and a slower progress in the formation of new bark is apparent." *Useful and Ornamental Planting*, p. 4.

Remark.—In this extract we have an illustration of the application of science to practice. It teaches:

1. That the pith is necessary to the production of buds and radicles (fibrous roots,) and that these are both annual.
2. That when a branch is taken off close to the bole or body of a tree, no reproduction of shoots takes place; but that shoots will spring from the spurs or stumps of limbs. This indicates the propriety of cutting always close to the bole.
3. That midsummer pruning, when the sap is for some days or weeks comparatively quiescent, is the most effectual in preventing the growth of new shoots, and in speedily covering the wounds with new bark; and that the reverse of this happens when trees are pruned in spring, autumn or winter.

It cannot but have been remarked, that orchards pruned in spring or fall, especially if the labor has been omitted some years, or performed in a careless manner, become unsightly and unproductive, from the innumerable sprouts or shoots which succeed the operation. I have two successive years pruned my orchards in July, after the grass or grain growing in them was cut, and have reason to be highly gratified with my innovation upon the old practice. Very few shoots were subsequently produced, and the wounds were nearly covered by new bark before autumn. The operation of pruning, to be well done, should be performed annually, or at farthest biennially, when the knife will be the principal instrument required, and the wounds so small as to heal readily.

Extract.—"The presence of leaves is essential to the growth of buds and branches, and consequently to that of the pith in these and in the roots; but the leaves are not otherwise necessary to the formation and growth of the *fibres or radicles of the root*, as these are produced in abundance when the plant or tree is leafless, and even during winter, when the ground is covered with frost and snow, the reservoir of nourishment in the *pith* being probably sufficient for that purpose."

Remark.—"The food is elaborated in the leaves,

while these organs perform their functions, descends through the inner bark, and a portion of it is communicated to the pith by the medullary rays. Thus the plant continues to be fed, if the term is admissible, by the prepared food, until the new leaves are expanded in the spring, and exercise their functions. The practical use I should make of this fact would be to transplant in autumn, and as soon as the leaves have finished their office, while the plant abounds in elaborated food, in order that this may produce new radicles (months) for the early supply of food in the spring. Prof. Lindley, than whom I can quote no better authority, decidedly concurs in giving the preference to fall planting. B.

(From the Genesee Farmer.)

VEGETABLE NUTRITION.

According to a table constructed by Sir H. Davy, from experiments made to ascertain the proportions of nutritive matter contained in different vegetables, the different varieties of beets contain from 136 to 151 parts in every 1000, parsnips 99, carrots 98, and turnips 42. As it is now ascertained that a greater quantity by weight of mangold wurzel can be raised upon a given quantity of land than either of the roots mentioned, it follows that, if they do not require a greater expense in cultivation and preservation than the others, their cultivation will be attended with the greatest profit. It is stated, by those who have had experience in the cultivation of mangold wurzel, that a crop can be raised with the same labor that is necessary for a crop of potatoes; and that they can be preserved in cellars, or elsewhere, by keeping them from frost through the winter, and that they will retain their nutritive qualities through the succeeding summer. Although we are opposed to a general innovation in agricultural pursuits, yet we recommend a fair trial of the cultivation of mangold wurzel, for the benefit of stock farmers. It is desirable to find out the cheapest article with which farmers can supply their stocks with green or succulent food during our most severe winter weather. Cabbage and turnips are liable to be destroyed by insects, which renders those crops too uncertain. Carrots and parsnips require much labor. Potatoes require boiling, but all things considered, are at present our most valuable crop for the above purpose in general cultivation, so that experiments should determine between them and mangold wurzel.

RURAL ECONOMY.

(From the Village Record.)

CHESTER COUNTY (PA.) CATTLE.

The cattle mentioned in the last RECORD, were exhibited at WM. REED'S HOTEL, from Tuesday morning until Thursday at noon. They were very handsome, and called together hundreds of visitors who were favored with excellent sleighing, and the weather being pleasant the inducement to such visit and view, was increased. At about two o'clock, on Thursday, the two heaviest oxen, those fed by Emmor Seeds, on Brandywine Farm No. 4, were placed on two connected cars, at the depot of the West-Chester Rail Road—and being properly secured—two horses were harnessed thereto—and they left the depot, cheered by three loud huzzas in the presence of not less than three to five hundred persons. The purchaser, Mr. HENRY BONAFER, we understand to be an enterprising and liberal victualler of Philadelphia. For this pair of oxen, he offered and we presume paid \$325 00 to E. Seeds, to whom he gave the privilege of receiving that sum or \$11. 00 per cwt. It excited a degree of hilarity in the spectators, to see the cheerful countenances of the farmers, and to hear their jokes, while viewing the just proportioned and well-fatted animals which were about to leave the

TEA.—Most ladies consider it sufficient that the tea kettle has boiled, and not that the water be always boiling hot when it is poured into the tea pot. To make a good dish of tea, scald the tea pot, put in the tea, pour on two or three table spoonfuls of water; let it stand a few seconds, and then fill up with the water *boiling* hot every time the tea pot is filled; the kettle should be previously put on the fire.

country to gratify the palates of the citizens.—See below the Report of the committee of Farmers and Graziers.

At a public meeting of farmers and graziers, held at the house of WILLIAM REED, in the borough of West-Chester, on Tuesday the 5th of March, 1833, DAVID WOELPPER was called to the chair, and Jesse Pusey appointed secretary.

The object of the meeting being stated to be, to consider the propriety of taking some order in relation to a number of cattle which had been brought to the borough for exhibition: on motion it was Resolved, That Jesse Pusey, Joel Pennock, Edward Inskip, Samuel Morris, Jr., and John Hickman, be a committee to examine the said cattle, exhibit them to the company assembled, and make report to the meeting.

The meeting then took a recess for two hours, and afterwards met again in the same place, when the above mentioned committee submitted the following report, which was unanimously adopted:

REPORT.

The duty assigned us by the appointment of the meeting has been performed. At 5 o'clock, P. M. five remarkably fine looking cattle were driven up under our direction in front of the hotel, and exhibited to a large number of our fellow citizens. Of those cattle, two were fed by Emmor Seeds, of East Bradford, two by John Gheen of Pennsbury, and one by John Hickman, of West Bradford. Those belonging to the first named gentleman, were the largest and heaviest, and probably exceed in weight any cattle heretofore fed in the county. Those of Mr. Gheen are exceedingly fine, and we are persuaded have seldom been surpassed in neatness and fatness by any of equal age. The heifer of Mr. Hickman, is young, plump and beautiful in its proportions, and appears as well fed as any of the lot.

The estimates of the weight of these cattle are various, and the different members of the committee find some difficulty in forming an unanimous judgment; but have little hesitation in believing that those of Mr. Seeds, will weigh from 3000, to 3300 lbs. and Mr. Gheen's from 2100 to 2300 lbs.

This exhibition has afforded much satisfaction to the committee, and they consider the effort to excel in the feeding of cattle, very creditable to the gentlemen concerned. Their example we hope will be imitated and their success emulated by others. The credit of the county as a grazing and feeding district, will be elevated by the attempt and we shall all find our interests promoted and our feelings of pride gratified by the result.

On motion, Resolved, That the proceedings of this meeting, together with the report of the committee, be published in the papers of the county.

DAVID WOELPPER, Chairman.

JESSE PUSEY, Secretary.

The cattle referred to in the foregoing proceedings have been purchased by that enterprising citizen Mr. Henry Bornell, and are destined as we understand, for the Philadelphia market.

(From the Genesee Farmer.)

THE HONEY BEE.

ITS CULTIVATION UPON THE HOUSING PLAN.

Hammond's Port, Feb. 1, 1833.

I have read the communication of ULMUS, [published in the American Farmer, Vol. XIV. No. 46,] on the cultivation of the bee, with much interest. Like him, I am a new beginner in the rearing of this useful little insect. Having read a communication two years since of Judge BURL, in which the housing system is recommended, I determined to make the experiment. But, like Ulmus, I was not sufficiently informed in the particulars relative to this mode of culture, the placing of the hive, the arrangement of the interior of the house, &c. For this I had no other guide than my own judgment. Last winter I pre-

pared a room in my shed loft—obtained a hive of bees, and placed them in it. Thus far I am much pleased with the result of the experiment. The room is about five feet by six on the east end of my shed, and facing the garden, ceiled and made tight to exclude insects and secure against cold in the winter. I placed the hive on a shelf against the side of the house next the garden, and even with the shelf made a hole, for the egress of the bees, four inches wide, and one and a half inch deep, in which I inserted a spout on the outside of the house ten inches long, with an orifice two inches wide, and one-third of an inch deep. This was the more effectually to prevent the entering of the bee moth. Besides this, I inserted two others, to be closed until the bees increased so as to need them. Even with the top of the hive I formed a rack of narrow strips of lath, supported by cross pieces, far enough apart for the bees to pass between them. Above this I placed two more tiers of lath, about sixteen inches between the tiers, with rods passing between the tiers to support the combs. The house was made perfectly dark, with a small tight door opposite the shelf for occasional entrance. The bees commenced operations vigorously in the spring—cleared the hive of dead bees, &c. filled up the vacant cells; and began to form their combs on the outside of the hive, attaching them to the strips of lath. To my extreme regret, the worm soon made its appearance, so early that I was convinced it was in the hive when I obtained it, or the eggs from which it was produced. The worms increased considerably—went through their several changes, and abundance of the miller came forth. The bees, however, kept on working, though several of the combs were injured by the worms, and formed thirty or forty weight of beautiful white honey outside of the hive. On the approach of cold weather, the bees all collected into the hive, and left the outside combs free, which were removed with perfect ease. Had there been no worms in the hive when I obtained it, or eggs of the moth, I doubt whether the apiary would have been much molested by them, as I several times watched the motions of the miller in the evening outside, and never saw but one enter. I am now making several alterations in my house, which I think of importance.

1. *To make the house warmer.* For this I shall make the floor double, and perfectly tight; the walls also double and filled in with straw or chaff—perhaps dry tan bark would be better; and in addition to this, plaster the room inside, that there may be the fewest possible cracks or joints for the moth to deposit her eggs, and for the entrance of the cold air. I am satisfied the bees in my room would have perished with the cold, if they could not have found place in the hive.

2. *To simplify and improve the internal arrangement.* To this end, I shall suspend the hive by wires, agreeable to the suggestion of Ulmus, near the top of the room, without any bottom board to it, that the worms, if there be any in it, may fall down, and be unable afterwards to effect a lodgment in it. And instead of the strips of lath, I shall substitute shelves, about eighteen inches wide, smooth on the upper side, with holes bored through them for the bees to pass up and down; the shelves to rest on cleats at the ends, but not to touch the side of the wall, leaving sufficient room for the bees to pass, and forming no hiding place for the worm, or deposit for the eggs of the moth; the joints at the ends of the shelves to be carefully filled with putty, or some other substance; two rods must run between these shelves, as in the other construction, lengthwise, supported by standards. These shelves will be preferable to the racks of lath, on account of their affording fewer crevices, and the greater ease with which the combs may be taken from them.

3. *To ventilate the room.* This, I think, will add to the health of the bees, by making their room cooler in summer, carrying off the perspiration, and secure

against the combs breaking down by too great heat, as was the case with mine in the fore part of the summer. To effect this, I shall make two holes through the floor, covered both outside and inside with a fine wire screen, having on the outside a slide to stop it as cold weather approaches; and in the upper ceiling, one or more tubes are to be inserted, communicating with the outside, to be covered with a wire screen, and having slides to stop them on the outside in the winter. By making their house thus tight and warm, and putting up sufficient fixtures, I see no reason why the bees may not increase till they fill it. To give them room to work for many years, I shall put a range of shelves on the south as well as on the east side. I shall be particularly careful to make every joint perfectly tight wherever the bee moth may deposit its eggs. By taking this precaution, and using these long tubes or spouts for the entrance of the bees, I think the worm may be kept out. These are the alterations which I am now making in my apiary. Time will test whether they are improvements or not. In another communication I shall suggest what I consider an improvement upon the plan of Ulmus, in the construction of his extended hive.

W. W. B.

(From the Southern Planter.)

RAISING CALVES BY HAND.

Traverseville, Feb. 12, 1833.

MR. EDITOR.—Having found you very desirous of communications connected with agricultural concerns, I have thought proper to recite to you my method of raising calves by hand, and thereby not only enlarging the dairy product, but actually rearing a finer animal and in less time. At one day old, the calf is removed entirely from the dam, and fed at first with milk fresh from the cow and in a pail in which the feeder may lay his hand, putting a finger into the calf's mouth by which the little animal will soon drain the pail. By a little care and ingenuity in the feeder, the calf will presently either drink the milk, or thrusting its nose to the bottom of the pail, suck up the contents every drop. Having taught the creature to take its food in this artificial manner, proceed to add to portions of thin corn meal mush, as much skimmed milk as will reduce the mush to a proper consistency for suction, and render the mixture a full feed for the calf. Feed thus three times a day. Any child eight years old will take interest in administering to the little beast, and be fully competent to discharge the office of feeder for a number of calves.

Should the diet ever disagree with the calf, substitute fresh milk a time or two, and all will be well again. Probatum est. Yours, respectfully,

GEO. P. COOPER.

(From the Genesee Farmer.)

DISEASE IN CALVES.

Corington, Feb. 12, 1833.

MR. EDITOR.—In the fall of 1831, I lost three calves by a disorder altogether new to me. They were taken lame at first in one of the hind legs, and generally died in about from 24 to 48 hours after. On opening them, the hind quarter above the gambrel joint appeared mortified and rotten. In some the intestines appeared affected in the same way. The blood before death appeared thin and watery. Last fall I lost two more, with the same disorder I believe. These, however, appeared affected throughout the system. These calves were all in good order. My neighbors have lost several with the same disorder, and I have not found any one that can give any light on the subject. The object of this communication therefore is, to see if you, or any of your correspondents, can give us any information on the above subject; for unless something can be done to prevent or cure the above disorder, the raising of calves will be rather unprofitable business in this town.

A SUBSCRIBER.

Prices Current in New York, March 23.

Beeswax, yellow, 18 a 20. **Cotton**, New Orleans, 11 a 13½; Upland, 10 a 12; Alabama, 10 a 12½. **Cotton Bagging**, Hemp, yd. 13 a 21½; Flax, 13 a 14½. **Flax**, American, 7 a 8. **Flaxseed**, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. **Flour**, N. York, bbl. 5.75 a 5.87; Canal, 6.12 a 6.37; Balt. How'd st. 5.75 a 6.00; Rh'd city mills, — a —; country, 5.62 a 5.75; Alexand'a, 5.75 a —; Fredricks'g, 5.62 a 5.75; Peters'g, new, 5.62 a 5.75; Rye flour, — a —; Indian meal, per bbl. 3.75 a 3.87; per hhd. 16.50 a 16.75. **Grain**, Wheat, North, — a —; Vir. — a —; Rye, North, .81 a —; Corn, Yel. North, .66 a .67; Barley, — a —; Oats, South and North, — a —; Peas, white, dry, 7 bu. 6.00 a —; Beans, 7 bu. 8.00 a 9.50; **Provisions**, Beef, mess, 8.25 a 8.75; prime, 5.25 a 5.75; cargo, — a —; Pork, mess, bbl. 12.50 a 13.50, prime, 11.00 a 11.25; Lard, 7½ a 9.

LANCASHIRE GOOSEBERRY PLANTS.

Just received from England the following choice assortment of the celebrated Lancashire Gooseberry Plants, which are offered to the public with confidence in their superior quality, their genuineness, and fine condition. They will be packed so as to be carried safely any distance; but those that have to go far would better be ordered without delay. The following is a list of twenty-seven kinds:

WHITE FRUIT—Capper's Bonny Lass, Boardman's Smiling Beauty, Holden's White Muslim, Saumpson's Queen Ann, Yates' Thrasher, Leigh's Toper.

YELLOW OR AMBER—Nelson's Waves, Hill's Royal Sovereign, Weedham's Delight, Large Golden Queen, Forbes' Golden Eagle, Sandiford British Favorite.

RED—Walker's Bank of England, Kirsham's Fairmaid, Jolly Minor, Dean's Glory of England, Chadwick's Sportsman, Boardman's British Hero, Boardman's Prince Regent, Fletcher's Crown Regent, Millington's Crown Bob, Eckerly's Jolly Printer, Bell's Glorious, Bratherton's Overall.

GREEN—Hoppley's Shannon, Parkinson's Laurel, Allan's Glory of Ratchiff.

These plants have been carefully selected from the best sources by a competent person, and are truly fine.

Prices.—Several of these varieties are sold from the gardens at from 50 cents to \$1 per plant, (they are all superior kinds,) but I offer them as follows:

Purchasers may select at 40 cents each, or thirteen plants for \$5. When the selection is left to us we will send three plants for \$1, or sixteen for \$5. The number of each kind is very limited.

ANTWERP RASPBERRY AND CURRANT BUSHES;—GENUINE.

Just received a few plants of the Red Antwerp Raspberry, best kind, at 25 cents each, or \$2.50 per dozen. Common kind usually known by this name, and bearing fine fruit, 12½ cents each, \$1.25 per dozen, or \$9 per hundred.

Genuine Antwerp or Large Dutch Currants, 25 cents each, or \$2.50 per dozen.

Address J. I. HITCHCOCK.
American Farmer Office and Seed Store.

GRAPEVINES AND CUTTINGS.

For sale at the American Farmer Office and Seed Store, the following, which can be sent safely any distance:

ROOTED VINES.

Herbemont's Madeira, two years old, 83 cents each, \$3.50 per dozen, or \$25 per hundred.

Isabella, very fine roots, two years old, 37½ cts. each, or \$1.00 per dozen.

White Scuppernon, one year old, 25 cents each, or \$2.50 per dozen.

CUTTINGS.

Cunningham, finest native grape, both for wine and table, 12½ cents each, \$1.25 per dozen, or \$9 per hundred.

Woodson, very fine do. do. same price.

[For description of these, see American Farmer, Vol. xiv. No. 33.]

Norton's Virginia Seedling, fine, same price.

Cuttings of the Isabella, Muscadell, and Golden Chascelas, 50 cents per dozen. J. I. HITCHCOCK.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	200
Do 2 " " Do "	250
Do 1½ " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address J. I. HITCHCOCK.
Amer. Far. Office.

DOUGLAS' WHEAT MACHINE,

Made by Z. Booth, New York.

The Subscriber has the agency for vending this very superior implement, and has also a sample of a two and four horse power machine, which he will exhibit at his warehouse, Camden street, and also testimonials of the highest respectability, who have a practical knowledge of their worth.

HENRY W. GRAY.

March 29.—24

GRASS SEEDS FOR SALE.

Just received,

One hundred bushels Orchard Grass Seed.

One hundred and fifty bushels Herd's Grass Seed.

Sixty bushels Tall Meadow Oat Grass Seed.

Also on hand, prime Timothy and Lucerne Seed.

SINCLAIR & MOORE,

Mar. 29.

Corner of Pratt and Light streets.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of Hardy Rose Bushes, (among which is the much admired Greville,) double Albazeas, Honeysuckles, Cornus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets.

Feb. 22.

FIELD AND GARDEN SEEDS, &c.

J. S. EASTMAN offers the following Seeds for sale, viz. CLOVER, TIMOTHY, MEADOW OAT GRASS, MILLET, LUCERNE, COW PEAS, LARGE YELLOW PUMPKIN, and EARLY WHITE CORN.

Also a general assortment of GARDEN SEEDS, and WHITE ONION SETS.

Likewise in store, a general assortment of AGRICULTURAL IMPLEMENTS, embracing almost every article in the farming line, which he will sell low for cash or approved city acceptances.

He must decline opening any new accounts, except with those who will be liberal customers, and can give good references; and all such accounts he expects to be promptly settled once a year; and those who have accounts standing on his books over one year, are desired to settle the same. All Grass Seeds must be considered cash. Liberal discounts will be made on all implements purchased by merchants and others to sell again.

Feb. 15.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—A little improvement has taken place in the produce business. Howard street flour from wagons commands readily \$5.25, and considerable sales have been made from stores at our quotations. Millers are asking \$5.50 for city mills flour, though we do not hear of any sales at that price. Wheat has improved considerably, and our quotations of red may be considered its fair price.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop. common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 26.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 42 hds. Md.; 30 lds. Ken.; and 1 hhd. Ohio—total 73 hds.

FLOUR—best white wheat family, \$6.75 a 7.25; super Howard-street, — a 5.50; city mills, 5.44 a —; city mills extra 5.50 a —; Corn Meal, bbl 3.50; —; GRAIN, best red wheat, 1.10 a 1.15; white do — a —; —Corn, white, 60 a 62, yellow, 61 a 63;—Rye, 65 a 68 —OATS, 37 a 40 —BEANS, 75 a 80 —Peas, 65 a 70 —CLOVER-SEED 8.00 a ——TIMOTHY, — a ——ORCHARD GRASS 3.00 a ——Tall Meadow Oat Grass 2.00 a 2.50 —Herd's, — a ——Lucerne — a 37½ lb. —BARKLEY, FINEST 1.50 a 1.62—COTTON, Va. 10 a 12—Lou. 12 a 13—Alab. 10 a 11½—Tenn. 10a. 12; N. Car. 19 a 12; Upland 10 a 12½—WISKEY, hds. 1st p. 28 a 28½; in bbls. 29½ a 30 —Wool, Washed, Prime or Saxony Fleece 43 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 50 a 30; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18 Hemp, Russia, ton, \$200 a 215 Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37a 38; Plaster Paris, per ton. 5.00 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.50 a 6.25 —Oak wood, 3.00 a 3.25; Hickory, 4.50 a 5.00; Pine, 2.25.

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GENERAL

Agricultural and Horticultural Establishment; COMBINING.

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore; in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

It is an extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent gratis to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorized to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, APRIL 5, 1833.

MANGLE WURTZEL FOR CATTLE. Last year we made an experiment with mangel wurtzel for cattle, and the result was highly satisfactory—so much so that we shall hereafter adopt it in preference to all other root crops for the purpose. Having about the sixth of an acre of ground prepared for early corn for which we had not seed enough, we determined to plant it in mangle wurtzel as an experiment, having very little confidence in its equality with ruta biega. We accordingly soaked the seed twenty-four hours in warm water, laid off furrows about two feet apart, and dropped the seed six or eight inches apart, covering it as we do corn. When the plants were up, we passed over the field with a weeding hoe, and subsequently run a small plough through it twice, clearing out the weeds with a hoe. This is all the cultivation it had, and we feel certain that all the work bestowed upon it, including the original preparation of the ground for corn, did not amount to more than two full days work for one man. We put no manure on the ground, though it had been manured the year before for potatoes, and for planting in early York cabbages, which were killed by the severity of the winter. The soil was a fair medium mold, a mixture of sand, clay and vegetable matter; high ground, but level. When the mangel wurtzel was gathered, it was estimated by every one at seventy-five bushels; some more, but none less. It was also perfectly evident that we might have taken at least one-fourth more, if not double the quantity from the same ground, had we planted more carefully and laid the rows fifteen or eighteen inches apart, instead of two feet. There was many places in the rows where there was not a plant for six or eight feet; and then again many places where they were so crowded that the roots could not fairly develop themselves.

As food for cattle, especially for milch cows, our experiment was as follows: In October, our best milch cow began to fail in her milk, and we cut an arm full of the tops of the mangel wurtzel for her; this seemed to have a good effect, and it was repeated night and morning for a week, when she fully recovered her usual supply. The leaves were then withheld, and she immediately failed again in her milk. At that time her full quantity was about twelve quarts a day, and when the mangle wurtzel leaves were withheld, the quantity she gave was only about six quarts. She had a good pasture, with an excellent stream of water in it, and plenty of salt during the time; but at that season the grass does not afford sufficient nutritive matter.

After another week we began giving her the roots of the mangel wurtzel, cut small and occasionally sprinkled with shorts or corn meal, and a little salt, one peck of the roots given thus had the same effect on her milk that the tops had; and we suspended these a week, to try their effect the more certainly. The result was as above stated, a conviction that mangel wurtzel is the best and most profitable root we can raise for milch cows.

After cutting off the leaves, they very soon grow out again, so that they may be cut every fortnight. But we think it better to select the largest roots from crowded places, and give them tops and all; as we think the new growth of leaves is at the expense of the roots.

BUTTER.—A friend waited on us, yesterday, to communicate the result of a process, which had been recommended to him, of restoring butter to its original sweetness. Incredulous as he was, he made the experiment, and he authorises us to say it was entirely satisfactory. It consists simply of churning the butter with sweet fresh milk, in the proportion of about 3 lbs. of the former to half a gallon of the latter. Butter, thoroughly rancid, by this simple process, was rendered

sweet and good. Our citizens, in view of the present scarcity and dearthness of butter of even tolerable quality, will not fail to appreciate this discovery.

[Fredericksburg Arena.

THE HORTICULTURAL SOCIETY OF MARYLAND.

For the diffusion of Horticultural Science and the Improvement of the Art of Gardening; Associated Nov. 20th—Incorporated by act of the legislature, at December session, 1832.

The Council of this Association have resolved to open the public proceedings of the society, by an exhibition of plants, flowers, fruits and other vegetable productions.

The exhibition will be opened on the eleventh day of June next and will continue during that and the following day.

On the eleventh of June, popular lectures will be given in the hall of exhibition, and on the twelfth, the society will hold a public meeting, when an address will be delivered.

In furtherance of the views of the society, the Council have resolved to offer premiums to the aggregate amount of ONE HUNDRED DOLLARS, to be awarded to the finest objects exhibited, by a committee of judges appointed for that purpose.

The following gentlemen have been appointed to act as a committee of arrangement, viz: H. F. Dickelut, chairman, Z. Waters, Geo. Fitzhugh, James Moore, Edward Kurtz, I. I. Hitchcock, Sam. Feast, John Feast.

All who feel interested in the advancement of Horticulture, are invited to lend their aid in furtherance of this design. Those wishing to exhibit plants or other objects of Horticultural interest, will please communicate their views to the committee of arrangement, stating at the same time the articles they design to exhibit.

Letters on the subject, must be addressed to the chairman of the committee, from whom any further information may be obtained.

Baltimore, April 5, 1833.

(From Silliman's Journal.)

ON THE CUTTING OF STEEL BY SOFT IRON.

Extract of a letter to the Editor, from the Rev. Herman Daggett.

"I take the liberty to communicate to you a fact, which has lately come to my knowledge, and which I judge may be of considerable use to the mechanics, and perhaps in philosophy. It may not, however, be new to you.

"Mr. Barnes, (a cabinet maker of this place) had occasion to repair a cross cut saw, a saw to be used by two persons, of a very hard plate, which would require considerable labor in the usual way of filing. He recollected having heard that the Shakers sometimes made use of what he called a buzz to cut iron. He therefore made a circular plate of sheet iron, (a piece of stove pipe) fixed an axis to it, and put in his lathe, which gave it a very powerful rotary motion. While in motion, he applied to it a common file, to make it perfectly round and smoother; but the file was cut in two by it, while it received itself no impression. He then applied a piece of rock crystal, which had the desired effect. He then brought under it the saw plate, which in a few minutes was neatly and completely cut through longitudinally. When he stopped the buzz, he found it had received no wear from the operation, and that he could immediately apply his fingers to it, without perceiving much sensible heat. During the operation, there appeared a band of intense fire round the buzz, continually emitting sparks with great violence. He afterwards marked the saw for teeth, and in a short time cut them out by the same means. It seemed evident that the buzz in effecting the division, never came in actual contact with the plate."

(From Proceedings of the N. Y. State Agricul. Society.)

NEW YORK STATE AGRICULTURAL SOCIETY.

REPORT ON AN AGRICULTURAL SCHOOL.

(Concluded from page 17.)

Your committee have thus complied with the requisitions of the society, in submitting the plan of an Agricultural School, and an estimate of the expense necessary to establish and put the same into successful and permanent operation. It only remains for them to state their opinion of its utility.

The agriculture of a country affords the best criterion of its prosperity. Whether we compare kingdoms, states, counties, districts or farms, the condition of this branch of labor, which they severally exhibit, is a sure index, not only of the pecuniary, but of its moral condition. It is no less an axiom founded in truth, that agriculture prospers or languishes, in proportion to the science and skill of the men who manage its labors. It is not the natural fertility of the soil, so much as the intelligence and industry of those who till it, which gives to husbandry its interests and its rewards. The man who devotes the energies of a highly cultivated mind, to the improvement of this primitive and all important branch of labor, is a public benefactor. Cincinnatus did more to immortalize his name, and to command our applause, by his love of rural labors, than by his military exploits. Washington, amid all the honors that irradiated his brow, sought his highest pleasures in the business and retirement of the farm. And it was the first remark of our present chief magistrate, to the writer, after introduction, that he would not forego the pleasures of the farm for all the honors and emoluments that this nation could confer upon him. Education enables man to appreciate the wonderful provisions which God has made for his happiness in rural life, and imparts to him the ability of diffusing instruction and happiness to multitudes around him.

It should be the policy of government, therefore, which watches over the interest of all, to infuse into the labors of husbandry, all the lights of science and knowledge—to take care to expand and elevate the minds of those who are to give it efficiency and character, and to call forth skill and industry by proffered rewards. With us these considerations possess peculiar force. Our population and business are emphatically agricultural, and every aid which is extended to this class, benefits, indirectly, every portion of the community. Agriculture constitutes the fountains of the thousand rills which, swelling and traversing every part of the state, propel the spindle and the hammer of the artisan and the manufacturer, and finally, by their union, make up the mighty stream of commerce which unceasingly flows into the Atlantic.

That our agriculture is susceptible of improvement—that the products of its labors may be doubled, nay quadrupled, must be apparent to those who have compared our husbandry with that of some European countries, or who have contrasted, at home, the well cultivated district, or farm, with those which are badly managed. How is the desired amelioration to be effected? How can a better husbandry be so well promoted, as by teaching it to our youth?—by sowing our seed in the spring time of life? Prejudice no where retains a stronger hold than among farmers who have approached or passed the meridian of life. While some retain old practices, for want of confidence in their knowledge to guide them in better ones; others lack the first requisites to improvement—a consciousness that their system is not the most useful; while not a few are influenced, in their hostility to public means of improvement, by the desire to keep things to their own level. If we would efficiently improve this great branch of business, and elevate its character, as well as the character of those who are engaged in its operations, we must do what universal experience has shown to be the only sure

method;—we must lay our foundation in the rising generation—we must teach the *young* idea how to shoot—we must instruct the head to help the hands. Our physical and mental powers are twin sisters. They lighten each other's labor, and mutually impart a zest to each other's enjoyments. And as it is becoming common to introduce manual labor into literary schools, it is courteous that literature and science should requite the civility, by associating with the inmates of schools of labor.

Agricultural schools, although of modern date, have nevertheless been established in most of the states of Europe, and their utility has been fully demonstrated. Who has not heard of the school of Fellenburgh, at Hoffwyl, or of Von Thayer, at Moegeln—to which young men are sent from every part of Europe, and even from America? In France and Prussia agricultural schools have been founded and maintained by the governments. If they are found to be beneficial, and worthy of governmental support, in countries where power is vested in the few, how much more salutary must they prove here—where our institutions receive the impress of their character from the many, and where the perpetuity of these institutions depends emphatically upon the intelligence and virtue of the agricultural population. Despotism will never flourish in the American soil, but through the ignorance, and we may say consequent depravity, of its cultivators.

Your committee recall to recollection, with feelings of pride, the munificent benefactions of the legislature, to advance the literary character of our state; and the fact, that comparatively nothing has been done, legislatively, to improve our agriculture, which employs five-sixths of our population, can only be ascribed to the fact, that nothing has been asked for—nothing thought of. Our public colleges and academies, for literary instruction, are numerous and respectable. They meet our eye in almost every village. But where are our public schools of labor? Where is the head taught to help the hands, in the business which *creates* wealth, and which is the grand source of individual and national prosperity and happiness? Our literary and professional schools have been reared up and sustained by the expenditure of more than two millions of dollars from the public treasury, and they continue to share liberally of the public bounty. It will not, however, be denied, that the benefits which they dispense are altogether partial,—that the rank and file of society, destined by heaven to become the conservators of civil liberty, are virtually denied a participation in the science and knowledge,—in the means of improvement and of happiness, which they are calculated to dispense. Is it not a mandate of duty, then, as well as of expediency, that the benefits of public instruction should be more generally dispensed? We hazard not the fear of contradiction in assuming, that if a moiety of the public moneys, which have been appropriated to literary schools, had been judiciously applied, in rendering science subservient to the arts, and in diffusing the higher branches among the laboring classes, the public benefits from the appropriation would have been far greater than they are at the present day. How many hundreds may now be pointed out, of liberal education, who are mere ciphers in society, for want of the *early habits of application and labor*, which it is the object of the proposed school to form and to infuse! And how many, for want of these habits, have been prematurely lost to their friends, and to a purpose of usefulness for which man seems wisely to have been created—that of doing good to his fellows.

From a full conviction, that the interests of the state not only warrant, but require, an appropriation of public moneys to this object, your committee beg leave to recommend to the consideration of the society the following resolution:

Resolved, That a respectful memorial be presented to the legislature, in behalf of this society, and of

the great interest which it represents, praying that suitable provision be made by law, for establishing a School of Agriculture, on the plan recommended in the preceding report; and that the co-operation, in this application, of societies and individuals, friendly to the object of the petition, be respectfully solicited.

(From the Albany Argus.)

STATE AGRICULTURAL SCHOOL.

It will be seen by a reference to the proceedings of the senate of yesterday, that Mr. SUDAM, from the select committee of eight, to which was referred the memorial of the State Agricultural Society, reported in favor of the establishment of a State Agricultural School. The report was accompanied by a bill, the material provisions of which are as follows:

1. The comptroller to issue certificates of stock to the amount of \$100,000, bearing an interest of 5 per cent, and redeemable in 20 years, to be sold at public auction in the city of New York, to the highest bidder, the proceeds to be applied to the establishment of the school.

2. Three commissioners to be appointed by the governor, to purchase a farm and contract for the erection of suitable buildings for a school, sufficient for the accommodation of 200 pupils, the officers of the institution, and the servants for the farm.

3. The governor and senate to appoint seven trustees, to manage the concerns of the institution, who shall appoint a principal, teachers and overseers, and employ the necessary laborers and assistants, and to prescribe, with the advice of the principal, the police and regulations of the school.

4. The trustees to be a body corporate and politic, and required to report annually to the legislature, or regents of the university, a full statement of the condition of the institution in all its branches. No pupil to be admitted into the school under the age of 14 years.

AGRICULTURE.

(From Proceedings of the N. Y. State Agricul. Society.)

ON MANURES.

COMMUNICATION FROM JESSE BUEL, Esq.

The provident farmer, who knows the value of food to his stock, should equally appreciate the importance of food to his crops: for manure, that is, animal and vegetable matter, is as essential to the growth and perfection of the vegetable, as forage is to the growth and development of the animal. Mere earths, as clay, sand and lime, in whatever proportions they be blended, constitute no part of the true food of plants, although they may be incidentally found in them, and be essential to their structure, as lime is in the bones of animals. It is the mixture of vegetable and animal matters with earths that constitute what we denominate soils; and the quality of soils, in reference to fertility, is in a great measure determined by the quantity of vegetable soluble matter which they contain. Hence fields, long subjected to tillage, without occasional supplies of manure, become exhausted of vegetable food, and refuse a return to the labors of the husbandman. In some districts of our country, particularly in Maryland and Virginia, vast bodies of land, once fertile, have been thus injudiciously worn out, and thrown into commons as useless. Had the owners of such lands obeyed the golden rule, to till no more than they could manure well, their husbandry would have been more profitable, and their fields now fertile and enclosed. In truth, most of us act unwisely in these matters. We cultivate more land than we cultivate well. We are careless in saving manures, and wasteful in applying them. We should readily condemn the husbandman, as a bad manager, who should attempt to *fatten* upon his

farm, twice the number of cattle which it could *feed*. And yet this is precisely the policy which many pursue in regard to their crops. A starved crop is as discreditable to the owner as a starved animal.

In some of the Asiatic countries, where the population is dense, the preservation from starvation of even human beings, sometimes depends upon the fidelity with which every refuse vegetable and animal substance is applied to the soil, as food for plants, destined to subsist the human species.

In Europe, wherever agriculture is prosperous, we see the most scrupulous care used in husbanding and applying this pabulum of vegetation.

Flanders, which has been denominated the garden of Europe, owes much of her prosperity and wealth to her superior management of this source of fertility. Not a particle of fertilizing matter is wasted. The farm stock is fed, summer and winter, in paved stables or sheds, and the urine collected in tanks, and from thence distributed upon the crops. This, with the rape cake which is dissolved in it, constitutes the better half of a Fleming's manure. If applied fresh, it is diluted. It is carried to the fields, and distributed with facility, and forms the best application for clovers and other growing crops, and particularly for flax.

In America, we have been drawing, with reckless waste, upon the supplies of vegetable food which nature has been accumulating for centuries, without husbanding the resources which lie within our reach, and without reflecting on the sterility which we are likely to bequeath to posterity. The old settled districts of our country have already experienced the loss of natural fertility in the soil, and are endeavoring to restore it by a better system of husbandry. The new counties are destined to deteriorate, like the old ones, unless the evil is averted by a timely prudence in economizing manures, and in alternating with grain, more frequently, ameliorating and fertilizing crops, as roots, grasses, &c. Constant dropping will wear upon the hardest rock; and even the ocean would in time become dry, if the fountains which supply it were dried up. Providence endued the earth with fertility, and it is the indiscretion and violence of man which have rendered portions of it sterile and unproductive.

In the few remarks which I have to offer, I propose to consider:—

1. The means of increasing, and preserving from waste, those manures which fall within the reach of farmers generally.

2. The methods of applying them with economy. And,

3. To make some suggestions upon what I term specific manures.

First. Whatever has belonged to a vegetable or an animal, is susceptible of becoming food for plants, and should be converted to this use. And the quantity of such, which is wasted upon a farm, is very great. But the dead matter, in the course of its transmutation into the living plant, undergoes a decomposition, or separation of its parts, the volatile properties are disengaged in the form of gas, those less volatile commingle with the liquids which come in contact with the mass, while the portion that remains, after the fermentation which causes the decomposition of a dung heap has subsided, constitutes but about one-half of the original fertilizing matter; and even this must undergo a further and complete decomposition, in the soil, before it can be taken up by plants, and assimilated with their substance. To save the volatile and liquid portions, for the benefit of his crops, must therefore be an object of great interest to the farmer. If his manure ferments in his yards, and is leached by the rains which fall, the best half of it is irrevocably lost. And if the fermenting process is carried on upon the surface of his fields, the loss is nearly the same—the gases escape, and the liquids benefit but a comparatively small portion of the grounds. To prevent this great loss, till the ma-

nure can be properly applied to the soil, two courses may be adopted, one by retarding fermentation, the other by mixing with the manure earthy matters sufficient to absorb and retain the gases and liquids.

To effect the first object, the barnyard, the site of which should be upon a level surface, may be hollowed in the centre, so as to prevent the escape of the liquids, and to concentrate them from the borders, which may be left broad enough to feed the stock upon, and to afford a dry passage to and from the barn. To prevent the evaporation of these liquids, every species of vegetable litter from the farm and buildings, and the earth from the ditches, swamps and head lands, should be thrown into to absorb them; and as during winter the mass will be frozen, the stalks, straw, &c. may be fed upon this part of the yard. I am satisfied from personal experience, that no artificial puddling is necessary, even upon porous soils, to render such yards capable of retaining water. If greater perfection is desirable, the urine from the stables may be conducted in paved gutters to this reservoir, and a drain may be made to conduct any excess of liquids from it to a tank, from which they may be raised with a pump, and conveyed to the fields when wanted. The liquid manure may be transported in casks, placed upon tumbrils or carts, or conveyed by men, as in Flanders, two parallel poles being fastened to a barrel, below the bilge, and carried by two men. The manure from the horse stables may be spread over the yard, and thus kept from fermenting. Let it be borne in mind, that the best means of retarding fermentation in dung, is to have it constantly trod, in the yard, by the cattle, sheep and hogs; and, in the field, to have it compressed by the teams, which take it from the yard, driving over the pile, and by affording it an abundance of moisture. A loose mass is pervious to heat and air, which soon cause fermentation; but a compact mass, spread over the yard rendered hard by the hoofs of animals, and thoroughly saturated with moisture, will not ferment before the ordinary season of removal; and it often becomes necessary, and is in fact an excellent practice, to cut it with a broad axe or hay knife, to facilitate its removal. If the contents of the yard are applied, as they ought to be, to the spring crops, but an incipient fermentation, at most, will take place before they are removed to the field. To preserve dung in the fields from waste, it may be alternated, in piles, and covered, with earth, particularly with peat earth, or muck, from the swamps, which may be found on most farms. This swamp earth is principally, in its place, inert vegetable matter, a good material for feeding plants, when rendered soluble. But to render it so, it is necessary to combine it with earths, quick lime or barnyard manure, which, by generating heat, and probably inducing new chemical combinations, brings on a fermentation. If mixed with hot stable dung, in the proportion of three of earth to one of dung, in alternate layers, and in a pile four to six feet high, the mass will in a short time begin to ferment, when the whole will be found nearly as serviceable as yard dung. The mixture of earth with manure retards the fermentation of the latter, while the earths receive and retain the fertilizing matters which the manure parts with.

Second. It will be seen from what has already been said, that dung loses one-half of its value by being permitted to exhaust the powers of fermentation in the yard, and very nearly that portion when suffered to rot in piles upon the field, without covering or admixture. The deduction from these premises is, that as far as practicable the fermentation and decomposition should take place in the soil, or in other words, that dung should be ploughed in before the volatile parts have escaped. And the view I have taken of the matter would seem further to imply, what most farmers already know, that the more simultaneous the operations of hauling, spreading and ploughing in are performed, the more are the fertilizing properties of manure preserved. Dung loses much by drying,

after it is carried into the field, or spread upon the ground. The heat of our summers, and the rains which fall (and heat and moisture are the essential agents of putrefaction,) will ordinarily bring on a decomposition in the soil, to meet the wants of the growing crop. Nor are the mechanical effects of long manure upon the soil unworthy of consideration. The heat generated, and the gases evolved, by the fermentation of dung thus buried, render the soil light and porous, more permeable to the young roots, and more pervious to air, heat and moisture, the prime agents of vegetable nutrition. When dung ferments in large masses, the violence of the fermentation is great, and the loss of volatile matter in proportion to this violence. But when the process goes on in the soil, it is comparatively moderate, and the earth and growing plants absorb the volatile and liquid portions which it parts with.

Unfermented yard manures should be applied exclusively to hoed crops, as corn, potatoes, turnips, beans, &c. for two substantial reasons; first, because the culture of these crops tends to destroy weeds. &c. the seeds of which may be brought in with the dung; and secondly, because those portions of the manure which are first separated in the process of fermentation, are better suited to these than to crops which do not require after culture. Unfermented dung, applied in any considerable quantity to wheat or barley, for instance, is apt to cause too rank a growth of straw, which is liable to become rusty and to lodge, and to produce light and imperfect grain. Manures, on the contrary, on which fermentation has exhausted its powers, and such there always will be upon a farm, may be applied to these latter crops, in moderate quantities, with manifest advantage. My practice induces me to believe, however, that the entire benefit of the manure to the hoed crops is saved by applying it to them in its unfermented state; and that it is as beneficial to the wheat when thus rotted in the soil, as it would be if rotted in the ordinary way, in the cattle yard, with the advantage, in the former mode, of the dung being far better incorporated with the soil.

There are three methods in ordinary use, of applying manure. 1. to bury it in hills or ridges; 2. to spread and leave it on the surface, particularly of meadows; and 3. to spread it broadcast and plough it in. The last, I think, is the best mode, not only in reference to the permanent improvement of the soil, but for the advantage of the coming crop. It will be generally found, at least in loose and permeable soils, that the roots of plants equal in length their culm or stalk and sometimes exceed it. At an agricultural exhibition in the capital, a few years since, spears of corn were taken from a box in which they had been grown in a loose soil, the stocks and leaves of which measured but twelve, while the roots measured seven inches. The food of plants is taken up by the spongioles, on the fibres, communicating with the larger roots; and the conclusion seems to be a fair one, that roots, in a common field crop, penetrate every part of the soil, in pursuit of food, ere the crop attains maturity. Hence, if the manure is deposited in hills or ridges, the mouths of the plants are soon found to extend beyond the sphere of its influence, and are at least partially deprived of its benefit; whereas, if it is spread upon the whole surface, these roots are constantly reaching, as they elongate, fresh supplies of food. And I think I may add, as a third reason, that long manure is intrinsically better for these crops, than that which has undergone fermentation. Besides, where long dung is applied in hills and ridges, and a dry season ensues, there is not moisture enough to induce fermentation, and the manure proves injurious, rather than beneficial, to the crop. This will not happen where the manure is applied broadcast.

There is another species of manure available by every farmer, and of no trifling value, and which I am afraid does not receive the consideration it merits: I mean green sward. It has been ascertained that the vegetable matter contained in an ordinary grass lay,

exceeds twelve tons on an acre. This is all convertible into food for vegetables, and is, of itself, if not wasted by bad management, a good dressing for a crop. The same rules apply to this as to other vegetable manures: they are wasted by exposure upon the surface, after having been ploughed under. It is this consideration that has led to the substitution, by many of our best farmers, of fallow crops for summer fallows,—by which they contend, they not only save the fertilizing properties of the soil, but actually gain a crop from the soil. The ploughing for a fallow crop may be performed, upon stiff soils, in the autumn, and upon those that are light in the spring, and the ground may be rolled and harrowed, previous to receiving the crop, which may consist of corn, potatoes, peas, beans or oats. Upon light clover lays, wheat may be sown upon the first fallow, immediately after ploughing, and harrowed in. In this way the food for the crop is placed where the roots naturally search for it, secure from the wasting influence of the sun and winds. Lorain, who I consider the best American writer upon husbandry, and the best writer upon American husbandry, advises, and I am satisfied he does it upon sound principles, that the ploughing which is to follow the fallow crop be superficial, or shallow, so as to leave the unexhausted store of vegetable food below, where it will best subserve the wants of the second crop. Where repeated ploughings and harrowings are given, as is ordinarily the case in summer fallows, the vegetable matter is necessarily thrown to the surface, and much of its fertilizing properties borne off by the winds.

The principal arguments which are urged in favor of summer fallows, are, 1. That they are necessary to clear foul lands of grass and weeds; and, 2. That upon stiff grounds, in particular, they ameliorate, by pulverizing the soil, and rendering it more light and porous. In Great Britain the first consideration may have weight; but with us Indian corn, which is a cleansing crop, and which is planted upon almost every farm, renders a resort to naked fallows unnecessary upon light soils; and upon stiff lays, the cultivated crop gets so much the start, as to be very little affected by the weeds which subsequently spring up. In reply to the second argument, it may be remarked, that stiff grounds are generally retentive of moisture, and that after repeated ploughings and harrowings they are liable to be again rendered compact and hard by heavy rains. Whereas, when the furrow slices are lapped, every furrow becomes a sort of under drain, to receive and pass off the surface water, while the decay of the roots of the grasses renders the soil porous and permeable.

Thirdly. In speaking of specific manures, I am sensible I may be charged with venturing beyond the bounds of prudence. Yet the subject is so interwoven with my views of good husbandry, that I will run the hazard, relying upon the indulgence of my hearers for the errors I may betray. I assume as the basis of my remarks, that all plants take something in common from the soil, in the nature of food; and that in addition, different species, and perhaps all species, take something specific, necessary to their development and perfection, which other species do not require, and do not take. It is upon this assumption alone, that we can explain the natural attenuation of forest trees and grasses, or account for the manifest advantages derived from a rotation of crops in husbandry. The old variety has exhausted its specific food, and hence fails, and a new variety, requiring a different specific food, comes in. The soil, or the atmosphere, must contain the elements of the new plant; and as vegetation is said to be incapable of decomposing common atmospheric air, the soil must be mainly relied on for the specific food of the crop. To illustrate my views, we will say that the elements of plants, generally, and of their products, are carbon, oxygen and hydrogen, all of which abound in common dung; but that wheat, besides those, contain nitrogen. Primitive formations contain nothing

that gives nitrogen; and it would consequently follow, that primitive formations are not adapted to the growth of wheat, unless artificial applications that afford nitrogen, are first made to the soil. New England, with partial exceptions, is a primitive formation, and we very well know it is not congenial to the growth of this grain. The new lands, it is true, will often produce a crop or two, while the animal matter, which centuries has accumulated upon their surface, and which abound in nitrogen, remain unexhausted. And this may likewise happen where the manures applied are such as afford the specific food, as animal matters generally, urine, lime, &c. The failure does not arise from sterility. The straw of wheat may be made to grow as large in New England as in New York: yet the kernel will be small and comparatively shrivelled, for want of the nitrogen essential to perfect the gluten,—the substance which gives peculiar value, and which distinguishes this above all other grain. An extensive primitive region stretches through Pennsylvania and Maryland, contiguous to the great limestone valley. In this line is generally and extensively applied, and its efficacy to the wheat crop fully conceded. Clovers, and some of the other broad leaved plants, seem to find a specific food in gypsum, (sulphate of lime,) which, however, so far as my observation goes, is wholly inoperative upon wheat, rye, timothy, and some other farm crops.

The soil is the laboratory for preparing the food of vegetables, and fitting it for the delicate organs which are to absorb and transmit to the roots. Heat, air and moisture are the agents by which the process is carried on, and water the medium of conveyance. It has been demonstrated by vegetable physiologists, that the fluid matters which present themselves to the mouths of plants, are taken up without discrimination, carried through the albumen or sap wood, to the leaves, the organs of respiration, where the process of elaboration is perfected; that the elaborated or proper sap, then descends through another set of vessels, in the inner bark, depositing in its way the materials for a new circle of wood and a new circle of bark, which in the course of the season become indurated; and that the plant having retained all that is adapted to its wants, the residue is thrown off at the roots, like the excrementitious matter of animals. I shall mention one of the experiments of Prof. Lindley, in corroboration of the latter fact. He took a fresh plant with two prominent roots, one of which he plunged into a vessel of pure water, the other into water containing poison. In a short time the pure water became sensibly charged with the poison, which had been taken up by the root in the poisonous liquid, passed through the circulation of the plant, and voided by the other root in the pure water.

(From the Genesee Farmer.)

CHESS, OR CHEAT.

AS IT IS PRODUCED ONLY FROM ITS OWN SEED, IT
MAY BE DESTROYED.

Greatfield, 3 mo. 1, 1833.

We who reject the doctrine of transmutation, have some advantage over our opponents. If our advice be generally followed, all the chess growing from chess will be destroyed; but this will be all the chess there is, if we are in the right; and then the country will be rid of the nuisance. Now suppose for a moment that we are in the error: they cannot do more good when they are right, than we actually do when we are wrong; but if they are wrong, as we insist they are, they do no good at all, but something worse.

Let us look at the matter a little closer. We hold out encouragement to our farmers to persevere in the extirpation of chess, assuring them that like the dock and the mullein, it cannot spring from any thing but its own seed: therefore destroy all the plants before

they go to seed, and if none be, or one has been, brought from other places, there is the end of one weed.

Very different from this however, is the conduct of our opponents, and those farmers who imbibe their notions, may well say, "What is the use of trying? If we destroy all the chess on our farms, we shall soon have enough more. Wheat, as fast as we affront it with bad treatment, will turn into chess. We cannot clear our farms of it, and we may as well quietly submit to what we cannot avoid."

It must therefore appear that our opponents in this controversy, have not in view the advancement of our agriculture; and while we abstain from prying too closely into the cause of so much zeal directed to no useful purpose, let us hope that something may be found more worthy of them than a horror of having old and long cherished opinions disturbed and broken up.

I think some indeed, may be partly actuated by a love for truth; and I like the candid manner in which my neighbor Samuel Griggs has written on this subject. We are aware however, that almost every kind of grain has, at some time or other, been suspected of turning into other kinds and if I had room and my readers patience, I would lay before him a long list of such wonders. But in place of this, it will be better to offer such explanations as occurred to me while I was reading his essay, and before I read the editor's remarks, for there are various ways in which chess may obtain possession of a field.

It may be laid down as a general proposition that all (English) grain is presumed to contain chess, in larger or smaller quantities, unless the contrary be proved; and no experiment in favor of transmutation ought to be reported, unless special search with regard to chess in the seed grain has been made by some competent person. The propriety of this rule, I think must be admitted by every reasonable man. We have a right to "the whole truth." Unless where particular pains have been taken to extirpate this weed, it is highly probable that not one bushel of wheat entirely free from it, could be found in the whole Genesee country. If wheat or rye contains it, there is little chance for oats or barley to escape, when all these kinds of grain are threshed in the same barn. The tailings which abound with chess, are often scattered over the floor; and even if it be swept, a portion will remain in the cracks and crevices, which a subsequent sweeping may brush up among the grain which has been just threshed, and which may have been clean when it was brought to the barn. Chess is easily hid among other grain; and it has been shown that what many farmers would call clean seed wheat contains chess enough for a crop. A friend of mine the other day, saw some wheat at the mill so remarkably fair that his curiosity was excited, doubting if it could contain any other seed. To resolve the doubt however, he carefully spread out a handful on a board, and found amongst it four grains of chess. When farmers therefore in ordinary cases, speak of clean seed, we are to understand that it is only comparatively, and not positively, clean.

I mean to apply the foregoing rule to the three cases reported by my neighbor; and then we shall see that they afford no kind of proof whatever that either oats, wheat, or rye, turns into chess. A plant that can adopt itself to circumstances so far as to produce good seed, whether it has room to grow four feet high, or only four inches, is hard to exterminate; and chess is of this kind. A subordinate crop of this weed, sufficient to seed the ground, may have grown amongst his oats; but in addition to this consideration, that oat field was frequented by hogs, not wild, I presume, but such as had recently gleaned in wheat stubble which is seldom free from chess. Much of these small hard grains would escape their grinders, and be dropped unharmed on the field. The disappearance of the oats may be accounted for, without the aid of transmutation: those which grow among stubble commonly perish in the winter or spring, and very rarely, if ever, come to maturity.

For that part of his wheat-field, which produced half chess and a quarter smut, S. Griggs admits that the seed was sent to him, and the crop of smut showed that it was foul seed. The wheat as it declined, made room for the chess to grow.

Neither can there be any thing drawn in favor of transmutation from the rye patch. Whether the chess seed all sprouted and came up at the same time with the rye, or whether a part of it lay dormant till autumn, may be a question. Some of it may have ripened among the rye, for new land is not mowed very closely; or it may have been kept under by the rye, or by the scythe, without seeding till the next season. It is well known that many annuals may be converted into biennials, by preventing them from going to seed.

I would not name my friend Dr. D. A. Robinson without some expression of my regard for him, whose testimony would weigh as much with me as that of any other believer in transmutation; but it is not reasonable to expect us to admit parole evidence to prove what we consider impossible, and contrary to the laws of Nature. I would as soon admit parole evidence to prove the actual existence of the Centaur.

It is no new thing to hear of wheat and chess growing together on the same stalk; but such cases have always been reported by those who believed them no deviation from the established laws of Nature, and who may have hoped, or expected, to find such phenomena. Of course their scrutinizing powers would not be put so closely in requisition as his powers would be, who rejected such notions. Had our editor believed with them, he might have been imposed on by Wadsworth's wheat and chess head, and that fallacy have passed undetected. A case in some respects similar also occurred to my friend William Carman. He found in the harvest field, a head of wheat with a spikelet of chess projecting from it which made a very imposing appearance; but he soon unraveled the mystery by discovering that the spikelet had caught in the chaff of the wheat-ear, and had broken off. Had this fallen into the hands of one more credulous than persevering, it might also have been exhibited in proof of the doctrine of transmutation.

Oats and spring wheat not being winter killed, often stand more evenly and regularly over the field than other wheat; of course the chess has less room to grow; and commonly less of its seed is scattered on lands of this description.

Wheat that is eaten off when the stalks are eight or ten inches high, would consequently allow the chess which it had overshadowed and kept under, to spring up; but the mind that can infer from these appearances that the chess grew from the wheat roots and not from its own roots, must make but little use of proof in forming its opinions, and be easily satisfied with strange things.

The case of A. Burr's new wheat-field is prematurely reported. It would be some satisfaction to know wherein wheat-chess resembles wheat more than rye; wherein rye-chess resembles rye more than wheat; wherein flax-chess resembles flax; and why the offspring of that flax seed which was cleaned twenty years ago in Palmyra, has produced no flax chess in that long course of time? But I hope not for such concealment while all our arguments remain unrelated, and while facts of the most stubborn kind to our opponents, are left entirely unnoticed.

W. H. has given a circumstantial account of two wheat crops raised in succession, among which not one kernel of chess was found; and if we knew of no other experiment of the kind, this alone ought to shake the belief in transmutation. But when to this, are added the numerous instances already cited, of a total exclusion of chess from whole farms for many years together, and given on the most respectable authorities,—the tide ought to set still stronger against that belief. Neither is this all: in one wheat growing district where chess was formerly a trouble-

some weed, but from which the farmers were wise enough to expel it, nearly twenty years have elapsed since its final disappearance.* Evidence of this weight and magnitude, must preponderate in every well balanced mind.

But it is intimated that the experience of others in the present age or in the past, is to be outweighed and nullified by new experiments about to be made in these days: Grains of wheat, by some alchymic process, partly killed and partly kept alive, are to produce chess-bearing plants of the most prolific kind! For the reputation of our farmers I am glad that so few are implicated in this *manufacture*; and I hope not to be accused of wishing to depress *American talent*, when I apprise them that their day of triumph is more remote than they imagine. They will find, like the Baron Palissy, who wrought sixteen years to perfect his enamel, that "the road to Arts is long."

Suppose, having sown this *prepared wheat*, that they find chess growing in the place, will it prove that the wheat turned into chess? No more than it would prove that the wheat had turned into red-top, or spear grass, should such happen to spring up from a few seeds dropped from their sleeves. There is much uncertainty in conducting such experiments in a neighborhood where chess is abundant. We may have clean seed and clean ground, but who can say that no chess will be dropped there by accident? Selah Chapin raised seven heads of wheat from chess, as he avers. Many of our opponents however, no more believe that chess can turn into wheat than we do; but here a difficulty stands before them: they must either admit that statement to be correct, or admit that people (including themselves) may be easily deceived in making such experiments.

Suppose then that a result, in conformity to such overweening confidence, should be reported in the same unqualified manner as that in which the progress of the experiments has been announced, ought we to accept such report? No honest inquirer after truth would put such petty experiments,—liable to be interfered with, changed, and reversed by any animal that can carry and drop a few seeds,—in competition with facts, more numerous, quite as well attested, and which could not possibly have been deranged or perverted by accident or evil intentions. I have already noticed some farms on which no chess had been found among the wheat crops in thirty years. These periods included favorable and unfavorable seasons; much wheat must have been dropped in stubbles, and more or less of it left uncovered in every field that was sown; yet none of it turned into chess. Experiments so extended can admit of no mistake. No countervailing reports can be conclusive, and none ought to be accepted †

Some doubt whether pigeons disgorge chess. Incredible sometimes arises from knowing too much to be imposed on, and sometimes from knowing too little to understand the subject. The *crop* of the pigeon is the *basket* in which it carries food, often to the distance of 60 or 80 miles, every day for its young; and by means of a muscle which acts at will, it can empty that *basket* as readily as we can empty our baskets which we carry in our hands. In Winterbottom's History of America, this faculty of the pigeon, is given as a part of its *generic character*. Near Philadelphia, the opinion has been prevalent among farmers, that these birds feed on garlic (*Allium vineale*) which has much infested the fields, but that they eject it whenever they find better food; and one of my neighbors complains that a bad weed has been introduced on his farm by the pigeons, and he no longer permits baiting places to be made for them. The inquiry now arises, would a pigeon, whose *crop* was

filled with husky chess, prefer retaining it to eating good wheat? Its power to make the exchange is certain, and I have no doubt of the correctness of its taste. D. T.

HORTICULTURE.

(For the American Farmer.)

THE LILY OF THE HOLY SCRIPTURES.

I have lately noticed an attempt to impress the belief that the lily of the Old and New Testaments is not (as has been supposed) the common white lily, (*Lilium candidum*) which is a native of Palestine, but the *Amaryllis lutea*. I should have been better satisfied if the writer of that paragraph, had taken the trouble to show that his opinion was more conformable to the texts which relate to that plant; but as this has not been done, I must take the liberty to dissent, and I am willing to give my reasons for so doing.

The *Amaryllis lutea* is a little plant with one yellow flower on a scape about six inches high, and inferior in brilliancy and beauty to the majority of bulbous plants cultivated in gardens. But the lily of the scriptures is referred to, as one of the finest flowers of that country: "Solomon in all his glory was not arrayed like one of these." Mat. 6. 29. In the Song of Solomon, it is placed on an equality with the rose: "I am the rose of Sharon, the lily of the valleys." 2. 1. I find no reference to its *color*, but it was very fragrant: "His lips, lilies, dropping sweet smelling myrrh." Song 5. 13.

All these particulars agree well with the white lily, but not with *Amaryllis lutea*; and how this little flower could be the subject of the following references, it would require some ingenuity to discover: "As the lily among thorns, so is my love among the daughters." Song 2. 2. "He shall grow as the lily, and cast forth his roots as Lebanon." Hosea 14. 5. The former text shows it not too diminutive to compare with the thorn; and the latter text, evidently refers to a plant of vigorous growth. A FLORIST.

(For the American Farmer.)

GRAFT AND STOCK.

I could be well content to believe, if I could find reasonable proof, that *trees have a determinate period of existence*; and that a graft taken from an old one must die in the same age as the parent stock. I have not yet made the discovery however; and the argument for this opinion, copied into your valuable paper at page 397 of volume 14, is what logicians call a *non sequiter*, or an inference not warranted by the premises, if "all the new kinds so remarkably clean and healthy" are the offspring of the common apple and Siberian crab, as I understand them to be; for then they are *hybrids*, not belonging to the same species as the old varieties, but differing in their natures; and having never been like them, it necessarily follows that these *mules* furnish no proof that the others have ever changed, or deteriorated.

There are two other opinions in that essay on the varieties of "FRUIT," in which I can scarcely join with the intelligent author. He says, "the animal can have but one father—the vegetable may have a plurality of fathers." I suspect it would be hard to show such a difference. It is a belief among some breeders, that pups or pigs of the same litter may have different "fathers," but I never heard of a pup or pig supposed to be the offspring of two "fathers." Why then should we believe that one seed of an apple should be fecundated with the pollen from two other trees? I incline to think that the seed is fecundated at once; and by a particle of pollen so small as not to require the assistance of any other particle. If there is any just analogy between the seeds of plants and the eggs of insects or of fishes, some light may be thrown on this subject from that quarter. The

queen bee from once pairing, lays from 70,000 to 100,000 fertile eggs; and a single female of several kinds of fishes, produces at one time more than one million of eggs. The quantity of *semen* to impregnate one egg must therefore be almost infinitely small; and we can scarcely imagine that any definite or assignable quantity, is too small for the purpose.

The other opinion with which I am not entirely satisfied, is, that "the roots of a grafted or budded tree take the habits of the scion." The circumstance so frankly expressed that the quince and the paradise apple are exceptions to this rule, shows that the subject deserves to be more closely examined. The known effects of the grafted branches on the stock is not very great; and where the graft has been set a few feet from the ground, nothing is more common than a visible, and often a remarkable, difference in the size of the trunk, commencing exactly at that point. If then the branches have so little control over the size of the stock, we ought least of all to expect that they would give *shape* and *direction* to the roots. Some years ago, I had a variety of the domestic plum, remarkable for sending up sockers from its roots, far and wide; and for want of better stocks, I grafted into them many varieties of the plum, and about half a dozen kinds of apricots. On examining these however, I cannot discover that the branches have restrained the roots in any manner whatever; and it would be strange if they should, for this supposed control would be withstood and resisted by the first sprout that appears. Z.

(For the American Farmer.)

ANEMONE PAVONIA.

Greatfield, Cayuga Co. N. Y. 3 mo. 22, 1833.

In the 14th volume, page 277, of the American Farmer, I gave some account of the *Anemone pavonia*. It continued in flower till the severe frosts marred its beauty; and then, fearing that the root might become frozen and perish, I placed thin inverted suds on each side of it, and brought their edges close together, so that the upper parts of the scapes and the longest leaves only, were uncovered. Over these I threw a light covering of evergreens, and left it to its fate. Since the middle of winter it has been well protected by the snow; but a general thaw having occurred within the last week, yesterday on lifting the evergreens, I found the anemone had been vegetating during its seclusion; and several new scapes had grown five or six inches long, though bent and crooked in consequence of their confinement. Should the weather continue mild a few days longer, it will be in full bloom.

I should have been afraid to trust this fine plant in the open ground during the winter, if I had not had two others in the house for safe keeping. On the approach of severe weather, these were *potted*, and taken into a common sitting room. Every necessary attention was paid to them in watering, &c. but the air proved to be too dry, and the flowers as well as the foliage began almost immediately to decline. D. T.

(From McIntosh's (British) Flora and Pomona.)

A NEW FRUIT.

"*Berberis Parviflora* deserves to be particularly noticed, as it is likely to become an addition of no ordinary description to the exotic fruits already in this country, the fruit being very fine, and used in its native country, (the Straits of Magellan) for making tarts and puddings.

"It is described as growing from seven to eight feet high, producing fruit abundantly; the berries being nearly as large as those of the black cluster grape, produced singly on short footstalks. This desirable plant was sent home by Mr. James Anderson, the intelligent and enterprising botanical collector."

* American Farmer, vol. xiii. p. 395.

† It has been suggested that they may cut the stalks on one side of a wheat plant to make it sprout up and yield chess while the other side yields wheat. Let them produce the plant!

TRANSPLANTING FROM HOT BEDS.—After raising plants in the hot-bed some little experience is necessary to insure success in removing them to open ground. The common error which is committed in this business is, planting them out before the weather becomes warm enough to keep up the vegetable circulation; and the consequence is, that during the rainy weather the plants look water soaked and perish; but if the weather continues dry and cold, tender plants will wilt and die. Each plant requires a certain degree of heat to cause it to flourish—some more and some less, and due reference should be had to this in removing them. Cabbages thrive best in cool, moist weather; but melons and cucumbers require a greater degree of heat, and of course should not be transplanted until the weather becomes warm enough to cause the yellow locust to be in full leaf.—*Genesee Farmer.*

RURAL ECONOMY.

(From the Genesee Farmer.)

A BEE STORY.

A friend told me the other day a bee story, and were he not a man on whose word I can strictly rely, I should set it down as a real Munchausen. Such as it is you shall have it.

In Wythe county, in Virginia, in a spur of the Alleghany mountains, called the "Tobacco Row," is a perpendicular ledge of rock fronting the southeast, about fifty feet high—an open sunny situation. About thirty feet from the base, a horizontal crack or fissure opens in the rock, from half an inch to six inches in width, and extending near eighty feet in length. How deep this fissure extends into the mountain is not known, as no one has ever examined it. *This fissure is full of bees!* Their numbers are so great, that in the summer time they hang out in huge clusters for several feet, above and below the fissure, in its whole length. A short distance above are two other cracks, containing earth, in which grow some little chinquapin bushes, and these are covered with bees. They frequently go off in huge swarms, like a barrel or hog-head in bulk, and are often compelled to return, finding no place large enough to contain them. In the spring previous to commencing their labors, the dead bees, remnant of comb, and cleanings of the habitation which are brought out and dropped by them, make a *winnow* of a foot in height the whole length of the opening.

My informant saw it in the month of June, when immense numbers of bees were out on the surface, making great patches of rock black with their swarming masses. The oldest inhabitants say that the first settlers found the bees there, and the Indians told them that their oldest traditions knew nothing of its origin. *"It was always there."*

No one has ever been found bold enough to attempt its plunder, or to examine the place where they are. It is, in fact, too dangerous an enterprise to meddle with.

If these facts be so, and I cannot doubt it, does it not form rather a new feature from that generally received in the history of the bee? *I rather give there is more than one queen in that hive!* By the way, I fear that I am going to have all this bee discussion to myself. But we'll see.

Do none of the correspondents of the American Farmer live near this great bee-hive? If so, I should be much gratified to hear further about it.

CLUES.

SCALDING HOG.—A gentleman of experience and observation desires us to make known, for the benefit of farmers, a mode practised by him of scalding hogs. Instead of putting cold water or a *hes* into the hot water, as is the general practice, he washes the hog in cold water previous to scalding it. It matters not

how hot the water may be with which the hog is scalded, if cold water is first used in the way prescribed, the hair can be taken off with ease and neatness. No danger need be apprehended of the hair becoming set, as is often the case when this mode is not resorted to, owing to a particular temperature of the water.

The gentleman who communicated to us this mode, says he has practised it for more than twenty years, and has not during that time, experienced any difficulty in scalding hogs.

In dressing a young pig for roasting, he first dips it in cold water, and then in hot, by which process he is enabled to remove the hair with the least possible trouble.—*Wyoming Herald.*

FEATHERS.—Feathers or down intended for use, should be plucked as soon as possible after the bird is dead, and before it is cold, otherwise they are defective in that elasticity which is their most valuable property, and are liable to decay. The bird should besides, be in good health and not moulting, for the feathers to be in perfection; and being plucked, and a sufficient number collected, the sooner they are dried in the oven, the better, since they are else apt to heat and stick together.—*Moubray's Treatise on Poultry.*

MISCELLANEOUS.

(For the American Farmer.)

A REMARKABLE SNAKE.

Colonel Hamilton, first British commissioner to Columbia in 1823, on his journey from Bogotá to Popayan, arrived at El Aneon, a gentleman's country house, where he was invited to remain with his suite two or three days to rest themselves before they undertook the passage over the *Judes*. After dinner the colonel and his secretary were invited by Dr. Borrero to go out to shoot, as the woods on the estate were well stocked with wild boars and deer. The following is his account of a remarkable snake.

"On returning home through a large chocolate plantation, the negro pointed out to us a snake coiled up and apparently asleep. I told the doctor I should like to have a shot at him, which I did with my left barrel, in which I had swan shot, and only wounded him in the tail. The moment I fired, he sprang up, looked round, and espied us; on which he came directly toward us, sweeping along, his head erect, and about three feet from the ground. We all now began to be alarmed; and the doctor ordered us to retire a few yards behind a large tree while he advanced to give him the contents of two more barrels, which movement was immediately executed; and when the snake was distant about ten yards, the doctor and myself fired, and cut him nearly in two, each barrel being loaded with seven or eight small slugs. We then shouted victory, and the rest of our party, being unarmed, came up to us. We examined our fallen enemy, and it proved to be a snake called *the aques*, from having a black cross like an X all along its back. This snake is considered by the *Crooles*, one of the boldest and most venomous in South America. He measured about six feet and a half in length, and was as thick as my wrist. Had I been aware that this had been so bold and venomous a snake, I certainly should not have disturbed his *siesta*. The doctor stated that several persons in the province had lost their lives from the bite of *the aques*, and that he had seen them considerably larger."

Colonel Hamilton again met with this kind of snake when he was travelling down the valley of Cauca. "As we were going to cross a stream; we observed a large snake swimming towards us; and when he arrived near the bank he stopped, apparently to watch our motions, with his head and part of his body out of water. I then observed the black cross on his neck,

and knew it was the snake called *the aques*. A negro who was passing on foot at this time, agreed for a dollar to endeavor to kill the reptile. For this purpose he went a short distance in the rear, and cut a large long bamboo with his manchette, and advanced to the attack of the snake, who had remained quiet in his position with his eyes fixed on us. As the negro approached the aques, he put out his forked tongue, and raised himself higher in the water, as if preparing to make a dart at his enemy, which the black observing, retired a few paces, and then told me he was afraid to attack it, as it was prepared to spring on him. In this position the negro and the snake remained for two or three minutes, watching each other, when suddenly the aques turned round to swim to the other side of the river. The moment the negro observed its head turned from him, he rushed to the bank, and gave the aques two or three tremendous blows with the bamboo, which made him turn on his back, and the negro followed up his attack and succeeded in killing his enemy. This aques measured six feet in length. The black brought it to me on his bamboo, and appeared much elated at his victory, and not less so when he received his reward."

(From the Boston Daily Advertiser.)

BIRDS AND INSECTS.

We have already intimated our opinion, that the labors of the scientific ornithologist are of far more practical utility, than the casual observer might suppose; and that, even in the business of legislation, a regard to his researches might prevent many errors, which may much affect the public welfare. There is no denying, that there has been no lack of legislation on the subject of irrational living things; fishes have received an undue share of attention in consequence of their negative merit of being good to eat, while the beasts have been made the object of attentions of a different sort; the several towns being duly authorised to raise money to be expended as a bounty for destroying some of the least popular of the race. Without inquiring into the propriety of this policy here, we must affirm that the legislation on the subject of birds has been marked by some essential errors, which have led to real evil. We have already alluded to the law of 1817, by which woodcocks, snipes, larks and robins were protected at certain seasons of the year, while war to the knife was declared against crows, blackbirds, owls, bluejays and hawks: these last were treated as a sort of pirates, subject to suspension at the yard arm with the least possible ceremony. It so happens that the character of these very birds has been singularly mistaken: for while the ordinance of legislation has been thus systematically levelled at them, they, on a principal which man would do extremely well to imitate, have been returning good for evil; they have been diligently engaged in extirpating all sorts of vermin, while never were the veriest vermin half so ill treated by the human race. The crow, for example, who is generally regarded as a most suspicious character, has had great injustice done him; in the spring, when the ground is moist, he lives in a state of the most triumphant luxury on grubs: he eats the young corn, it is true, but it is a necessary of life to which he never resorts, except when his supply of animal food is shortened. After the corn is tolerably grown, he has nothing more to do with it; and in any stage, he destroys at least five hundred pernicious grubs and insects, for every blade of corn which he pillages from man. In the Southern States he is regularly permitted to follow the ploughman, and collect the grubs from the newly opened furrow: his life is thus secured by the safest of all tenures, that of the interest of man in permitting him to live. There is scarcely a farm in England without its rookery; the humid atmosphere multiplies every species of insect, and these birds reward man for his forbearance by ridding him of legions of

his foes. By a policy like that which dictated the revocation of the edict of Nantz, they have occasionally been exposed to the mischievous propensities of raptorial boys, who, as far as utility is concerned, are not to be compared with crows, but the error of this step soon became obvious, and they are now received with a universal welcome. The hawk enjoys a doubtful reputation in the hen roost: he sometimes destroys the chickens, but with the consistency of man does not like to see his infirmities copied by another; and by way of compensation demolishes the fox, which eats twenty chickens where he eats one; so that it is hardly the part of wisdom to set a price upon his head, while the fox, a hardened knave, is not honored with a penal statute. How the owl came to be included in this black list, it is vain to conjecture; he is a grave, reflecting bird, who has nothing to do with man, except to benefit him by eating weasels, foxes, racoons, rats and mice, a sin for which most householders will readily forgive him.

In some parts of Europe, he is kept in families like the cat, whom he equals in patience, and surpasses in alertness; hour after hour he may be seen watching for his prey, with the air all the while of being completely absorbed in some mathematical problem. Another of these birds, the blackbird, is the avowed enemy of grubs, like the crow; in the middle states, the farmer knows the value of his company to pluck them from the furrow; while other less painstaking birds collect the vermin from the surface, his investigations are more profound, and he digs to the depth of several inches in order to discover them. When the insects are no longer found, he eats the corn, as well he may, but even then he asks but a moderate compensation for his former services: five hundred blackbirds do less injury to the corn, than a single squirrel. The last upon the catalogue of persecuted birds is the blue jay: whoever watches him in the garden will see him descend incessantly from the branches, pouncing every time upon the grub, his enemy and ours. These are facts which are derived from the researches of the ornithologists; and they certainly show, that a knowledge of the character and habits of birds may be of consequence in legislation, if it should do no more, than to give protection to the innocent.

We have already seen that the act to which we have referred protects some birds certain seasons of the year; among others the robin who lives on insects and worms, and has no taste for vegetable diet, and the lark, who is extremely useful in his way; the only wonder is, that it should have been thought expedient to allow them to be shot in any season. The quail, another of the privileged class, has no title to be named in company with the others; in the planting time, he makes more havoc than a regiment of crows, without atoning for his misdeeds, by demolishing a single grub. Nor is the partridge a much more scrupulous respecter of the rights of property; though, as he lives in comparative retirement, he succeeds in preserving a better name for honesty.

There are some other of our most familiar birds; of which a word may here be said. Every body has observed the little goldfinch on the thistle by the wayside, and wondered perhaps, that his taste should lead him to so thorny a luxury; but he is all the while engaged in devouring the seed, which but for him, would overrun the grounds of every farmer. Even the bobolink, a most conceited cockeomb, who steals with all imaginable grace, though we are bound to say that he is much more attentive to our southern neighbors in this particular, than to us, destroys millions of the insects which annoy the farmer most. All the little birds, in fact, which are to be seen about the blossoms of the trees, are doing us the same service, in their own way. Perhaps there is no bird which is considered more decidedly wanting in principle, than the woodpecker; and certainly, so far as man is concerned, there is none more conscientious. So long as a dead tree can be found for his nest, he

will not trouble himself to bore into a living one; whatever wounds he makes upon the living, are considered by foreign gardeners as an advantage to the tree. The sound tree is not his object: he is in pursuit of insects and their larvæ. In South Carolina and Georgia, forests to a vast extent have been destroyed by an insect, which would seem as capable of lifting a tree as of destroying it; the people were alarmed by the visitation, and sagaciously laid the mischief to the door of the woodpecker, until they found that they had confounded the bailiff with the thief; since they ascertained this, the people of Georgia have adopted towards this bird a line of policy very different from that which they pursue towards the Cherokees.

The injury arising from the loss of a single crop is hardly to be estimated. The experience which is taught us by our own misfortune is very dearly bought; and we think that if we can derive it from others—if, for example, we can learn from the ornithologist, the means of preventing such injury, as in many instances we may, the dictates of economy combine with those of taste, and warn us not to neglect the result of his researches.

(From the Genesee Farmer.)

MOUNTAIN RICE.

In the Library of Entertaining Knowledge, the following account is given of the *Mountain rice*, and of an unsuccessful attempt to introduce its culture in England.

"*Mountain rice* thrives on the slopes of hills and in other situations where it can receive humidity only occasionally. Dr. Wallich, the able successor of Dr. Roxburgh as superintendent of the botanical garden at Calcutta, sent to London a few years ago some specimens of *rice* grown on the cold mountains of Nepal. These seeds were furnished to him by the resident of the East India company in that district, and were recognized by the doctor as *mountain rice*. The degree of cold which this plant is qualified to bear is very great. According to the information collected on the subject by Dr. Wallich, the cultivators consider their crop quite safe if the growth of the plants is advanced five or six inches above the surface at the time the winter snows cover the ground. It is probable that the slow melting of the snow is beneficial to the growth of the plant which advances with great vigor on the return of spring.

"A knowledge of these circumstances might have led to the opinion that this variety of *rice* could be naturalized in England, if the attempt had not already been fairly made by one well qualified for conducting the experiment. Samples of six different sorts of the *mountain rice* which had been procured by Sir John Murray, from the neighborhood of Serimagar at the foot of Mount Imaus, were on the occasion alluded to, presented by the board of agriculture to Sir Joseph Banks, who planted each kind in a separate bed, in a sheltered spot with a south aspect in his garden at Spring Grove. The grains which were sown very thin on the 21st of May, speedily sprang up, and the plants tillered so much that the beds put on the appearance of compact, dense masses of vegetation; each plant having from ten to twenty offsets. Although the blades grew vigorously, attaining in a short time to the length of two feet, there was never any symptom of a rising stem; and if the ground was not watered, either by rain or artificially every three or four days, the plants began to assume a sickly hue. In this manner vegetation proceeded, without the smallest symptom of their perfecting themselves by fructification, when the plants were suddenly destroyed by an early night frost in September. Some of the plants which had been transferred to pots and placed in the hot house at an early period of their growth, soon died; while others which were sown originally in a hot house, produced

ears and flowered, but the blossoms dropped without perfecting any seed.

"The conclusion to which Sir Joseph Banks arrived from these experiments was unfavorable to the cultivation of *rice* in this country as a grain bearing plant." Part 29, p. 87.

With all due deference to so eminent a name, I must think this conclusion unwarranted. It appears from the information collected by Dr. Wallich that the *mountain rice* is a *biennial* plant; and that to have it well rooted in autumn is necessary to insure a good crop. In the experiment however, the *rice* was not planted till near the close of spring. If common winter wheat had been treated in the same manner, a conclusion might have been drawn with equal propriety, that the climate of England was unfavorable to the growth of wheat.

I think also that our author has been too easily satisfied on this point: and though writing so lately as the early part of the year 1832, he appears not to have known that any thing further had been done in England; or that this variety had been successfully introduced on the continent of Europe. The annexed account is from London's Encyclopædia of Plants, published in 1829.

"The dry or *mountain rice*, cultivated in Ceylon, Java, and of late in Hungary, has the culm three feet high. It is sown on mountains and in dry soils. In the hilly parts of Java, and in many of the Eastern Islands, the *mountain rice* is planted upon the sides of hills, where no water but rain can come; it is however planted in the beginning of the rainy season, and reaped in the beginning of the dry season. It is entirely unknown in the western parts of India, but is well known in Cochin-China where it thrives in dry light soils, mostly on the sides of hills, not requiring more moisture than the usual rains and dews supply, neither of which are frequent at the season of its vegetation. In Hungary *rice* has not been long cultivated: the *mountain* sort has been chiefly tried, and that in the manner of our barley or summer wheat. In England a crop of *rice* has been obtained near Windsor on the banks of the Thames. In Westphalia and some other parts of the south of Germany [the common?] *rice* has been long cultivated; there it is sown on lands that admit of irrigation. From long culture in a comparatively cold country, the German *rice* has acquired a remarkable degree of hardiness and adaptation to the climate; a circumstance which has been frequently alluded to, as an encouragement to the acclimating of exotics. It is found, Dr. Walker remarks (*Essays on Nat. Hist*) that *rice* seeds direct from India will not ripen in Germany at all, and that even Italian or Spanish seeds are much less early and hardy than those ripened on the spot."

Some years ago when I have been in the western parts of Indiana I was told by a very respectable and intelligent man that the *mountain rice* had been cultivated by one of his distant neighbors with success. The product was said to vary from thirty to sixty bushels to the acre in the rough, which might diminish to one third of these quantities by hulling. I have learned nothing in regard to its culture since that time.

There can scarcely be a doubt that the *mountain rice* would succeed in the neighborhood of our lakes; and though it would not probably supersede any of our other crops, we might be able to raise enough for home consumption. I have wished to try the experiment; and a notice that a few seeds of this variety were wanted, was given in *The American Farmer* last year, but no answer has been returned from any part of the United States. D. T.

MANURE FOR WHEAT.—Dr. Joseph E. Mose, states the opinion, that animal manures are particularly necessary for wheat crops, because gluten, the elastic proximate principle of wheat, contains nitrogen, which assimilates to its animal bodies.—*Silliman's Journal*.

Prices Current in New York, March 30.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, 11 a 13½; Upland, 10 a 12; Alabama, 10 a 12½. *Cotton Baggins*, Hemp, yd. 13 a 24½; Flax, 13 a 14½. *Flax*, American, 7 a 8. *Flax seed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.62 a 5.75; Canal, 6.12 a 6.37; Balt. How'd st. 5.75 a 5.87; R'd city mills, 5.87 a —; country, 5.62 a 5.75; Alexandria, 5.69 a 5.75; Friedrich's, 5.62 a —; Peters's, new, 5.75 a —; Rye flour, — a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a —. *Grain*, Wheat, North, — a —; Vir. — a —; Rye, North, 50 a —; Corn, Yel. North, .65 a .67; Barley, — a —; Oats, South and North, — a —; Peas, white, dry, 7 bu. 5.00 a —; Beans, 7 bu. 8.00 a 9.50; *Provisions*, Beef, mess, 8.25 a 8.55; prime, 5.25 a 5.75; cargo, — a —; Pork, mess, bbl. 13.75 a 15.00, prime, 10.50 a 10.75; Lard, 7½ a 9.

FINE MALTESE JACK FOR SALE.

The Subscriber has for sale (on commission) a fine Jack of the breed of the Knight of Malta and Royal Gift. He is six years old, a very powerful animal, a sure foal getter, very gentle and easily managed. Price \$200, delivered in Baltimore. The following are the dimensions of the animal furnished by the owner:

- 4 feet 2 inches in height, (12½ hands)
- 5 " 10 " round the body
- 3 " 6 " round the neck
- 1 " 4 " round above the knee
- 1 " 0 " round the knee

Apply to **I. L. HITCHCOCK,**
American Farmer Office and Seed Store.

ORCHARD AND HERDS GRASS SEED

For sale at the American Farmer Office and Seed Store, by **I. L. HITCHCOCK.**

Clean Orchard Grass Seed \$3 per bushel. A lot of this seed imperfectly cleaned will be sold at \$2.50 per bushel. Herds, \$1 per bushel.

SILKWORM EGGS

For sale at the American Farmer Office and Seed Store, at \$1 per thousand. They can be sent safely by mail if ordered immediately, before the weather becomes warm. **I. L. HITCHCOCK.**

BUFFALO BERRY TREE OR SHEPHERDIA OF THE ROCKY MOUNTAINS.

When our friends send to us for Gooseberry Plants we can very conveniently pack with them one or more of these truly splendid trees, which, when in bearing, are literally loaded with delicious red berries, resembling the Antwerp Currant, and set as thickly on every twig as kernels of corn on the ear. Price \$1 each.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at \$1 per bushel.

I. L. HITCHCOCK,
American Farmer Office and Seed Store.

ANTWERP RASPBERRY AND CURRANT BUSHES—GENUINE.

Just received a few plants of the Red Antwerp Raspberry, best kind, at 25 cents each, or \$2.50 per dozen. Common kind usually known by this name, and bearing fine fruit, 12½ cents each, \$1.25 per dozen, or 95¢ per hundred.

Genuine Antwerp or Large Dutch Currants, 25 cents each, or \$2.50 per dozen.

Address **I. L. HITCHCOCK,**
American Farmer Office and Seed Store.

BENE SEED.

Just received at the American Farmer Office and Seed Store, a supply of fresh seed of the Bene Plant, so celebrated for its medicinal virtues in the cure of the summer or bowel complaint of children.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents

PUBLIC SALE OF DURHAM SHORTHORN-ED CATTLE AND HIGHLY IMPROVED SHEEP

Will be sold on Wednesday the 2d day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd. The highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEWERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand. **DAVID MEADE, Administrator.**

April 5,—83

DOUGLAS' WHEAT MACHINE.

Made by Z. Booth, New York.

The Subscriber has the agency for vending this very superior implement, and has also a sample of a two and four horse power machine, which he will exhibit at his warehouse, Camden street, and also testimonials of the highest respectability, who have a practical knowledge of their worth. **HENRY W. GRAY.**

March 29—24

FIELD AND GARDEN SEEDS, &c.

J. S. EASTMAN offers the following Seeds for sale, viz. CLOVER, TIMOTHY, MEADOW OAT GRASS, MILLET, LUCERNE, COW PEAS, LARGE YELLOW PUMPKIN, and EARLY WHITE CORN.

Also a general assortment of GARDEN SEEDS, and WHITE ONION SETS.

Likewise in store, a general assortment of AGRICULTURAL IMPLEMENTS, embracing almost every article in the farming line, which he will sell low for cash or approved city acceptances.

He must decline opening any new accounts, except with those who will be liberal customers, and can give good references; and all such accounts he expects to be promptly settled once a year; and those who have accounts standing on his books over one year, are desired to settle the same. All Grass Seeds must be considered cash. Liberal discounts will be made on all implements purchased by merchants and others to sell again. Feb. 15.

SINCLAIR AND MOORES NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Buses, (among which is the much admired Greville,) double Altheas, Honeysuckles, Corcorus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver-leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Buses, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—An improvement will be noticed in wheat and corn, but millers are unwilling to purchase wheat at present prices. Howard street flour was selling from wagons at \$5.37½ yesterday. In other articles there appears to be no change though there is a steady business doing.

Tenney's.—Seconds, as in quality, 3.00 a 3.00; do. ground leaf, 5.00 a 9.00. Crop, common, 3.00 a 5.00; brown and red 1.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00. Fine yellow, 18.00 a 26.00. Virginia, 4.00 a —. Hapahannock, 3.00 a 4.00. Kentucky, 3.50 a 8.00. The inspections of the week comprise 417 bbls. Md.; and 35 lbs. Ohio—total 452 bbls.

Flour.—best white wheat family \$6 75 a 7.25; super Howard street, 5.50 a —; city mills, 5.44 a —; city mills extra 5.50 a —; Corn Meal bbl 3 25; —; Grain, best, wheat 1.12 a 1.15; white do — a —; —; Corn, white 70 a 71, yellow, 70 a 71; —; Rye, 65 a 68; —; Oats, 37 a 40; —; Beans, 75 a 80; —; Peas, 65 a 70; —; Clover, 1st 8.00 a —; Timothy, — a —; Or—; Grass 3.00 a —; Tall Meadow Oat Grass 2 75 a 2 50; —; Herd's, — a —; Lucerne — a 3 75 lb. —; Vernal — a 1 50 a 1.62; —; Corn, Va. 10 a 12; Lou. 12 a 12½; Ala. 10 a 11½; Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½; —; Wm. Key, bbls. 1st p. 25 a —; in bbls. 20½ a 30; —; Wool, Washed, Prime or Saxony Fleece 43 a 50; American Full Blood, 35 a 42; three quarters do. 33 a 35; half do. 30 a 33; quarter do. 25 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18. Hemp, Russia, lb. 200 a 205. Country, dew-rotted, 6 a 7c lb. water-rotted 7 a 8c. —; Feathers, 37 a 38; Plaster Paris, per ton, 5 25 a —; ground, 1.50 a —; bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00. —; Prime Beef on the hoof, 5 50 a 6 25; —; Oak wood, 5.00 a 3.25; Hickory, 4 50 a 5.00; Pine, 2.25.

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The American Farmer,

Edited by GEORGE B. SMITH, is issued every Friday.

TERMS.

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Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, APRIL 12, 1833.

We select for publication another letter, from among many, on the subject of the patronage of the American Farmer. We know not how it is, but so it is, that the first and greatest subject of human interest receives the least attention. What nation is there on the face of the earth, either great or prosperous, in which agriculture is neglected? And we may reverse the proposition: What nation is there with improved agriculture, that is not prosperous and powerful, and whose people are not happy and comfortable? As it respects the dissemination of knowledge, through the medium of the press or otherwise, it would seem that the subject of most importance to the whole community would naturally be the first to receive attention, and the one that would demand the greatest portion of it too; and therefore, that the present position of politics and agriculture would be reversed in this respect. But so it is. There are some twelve or fifteen hundred political papers in the United States, and only eight or ten devoted to agriculture; and the patronage of all these too, if concentrated upon one would not be greater than many a single political paper receives, and would then be no very great object. We like the spirit of the following letter on this subject.

Eluck Walnut, Va. March 28, 1833.

Dear Sir.—Inclosed you will find ten dollars, my subscription for the American Farmer, for the 14th and 15th vols. By way of atonement for delay in paying for the year just ended, I now pay for that and the one just commencing. I wish you success in the publication of a work which deserves the patronage of the agriculturists of the United States, and to which I would gladly lend any aid in my power. I can but observe, that it is no less a mark of bad taste, than bad economy, to contribute to the circulation of political papers, of all grades, sizes and qualities, which serve but to inflame the passions, delude the understanding, and corrupt the morals of the community. For, as political papers are conducted at present, without regard to principle, or respect for private or public worth, abusing without discrimination, or lauding beyond measure, whoever approves or disapproves, whom they applaud or condemn, contending for consistency and principles, without the possession of either; while a paper admitted by all conversant with its merits, to be really valuable, and eminently so, should decline in patronage, meet with a precarious support from the American people, especially the agricultural part of them. This should not be so; are agriculturists wise enough, are they alive to the true interest and glory of their country? the worn, guiled, and piny barrens of Virginia at least say no. While her politicians boast of her proud and lofty standing, why are her best citizens selling their worn and worthless lands, and flocking to the West and South? Sir, the reason is obvious, the neglect of all inquiry on the subject of vital importance, while they are all distraction and confusion on some eternal political bubble; which, though it last but for a week, will but make room for a successor. Thus in watching the folly of others, we give uncontrovertible evidence of our own. If one-tenth of the time and money that has been expended in Virginia in the discussion of abstract principles, and boasting of Virginia influence, Virginia doctrines, and Virginia patriotism, had been expended for the last twenty years in the pursuit of agricultural and mechanical information and improvements, I think I may venture to say Virginia would not have retrograded in her influence and numerical importance in the union. Please excuse this digression, and accept assurances of my best wishes.

SPECUTIA ISLAND WHEAT—hard to beat.—Some small parcels of wheat, remainder of the crop of S. W. Smith, Esq. were recently sent to the Baltimore market for sale. The four parcels weighed 641, 651, 641 and 65 pounds; were premiums awarded for weight and quality, this would be hard to beat!

STOCK OF THE LATE R. K. MEADE.—An important error occurred in the advertisement of the sale of the cattle, sheep, &c. belonging to the estate of the late Richard K. Meade, Esq. in our last number. The day of sale should have been the *twenty-ninth* of May, instead of the second, as stated in the advertisement.

We take this occasion to recommend this sale to the attention of agriculturists. The character and importance of the cattle and sheep of the late Mr. Meade, have frequently been a subject of remark in the American Farmer. This stock is the result of the untiring perseverance, good judgment and ardent patriotism, of the late proprietor, and comprises a very extensive collection, making attendance at the sale, an object worthy of the consideration of every farmer who wishes to improve or add to his stock.

AMERICAN FARMER.—This work has commenced the fifteenth volume, having run thus far, a race of real usefulness, dispensing every week, matter of great interest to the farmer and practical man. It was commenced in Baltimore by J. S. Skinner, Esq. of that city, and we well remember the curiosity which was excited by a paper bearing so novel a title. "American Farmer," said an old fellow with a frock on: "what won't they get a going next!" What is it said a bystander? what is it? "why a thing to coax us farmers to vote them into office I s'pose." But they were mistaken, it has pursued the "even tenor of its way," without meddling with party, or stirring up sectional jealousies. It has been a successful pioneer, and fearlessly led the way in the march of agricultural improvement; and we hope centuries will roll away, ere it shall diminish in interest, or cease from its labors. We wish we could persuade some of our friends, who take at least a half dozen political FIREBRANDS to drop one of them and take the American Farmer—to drop another and take the New England Farmer, (our own hebdomadal they take of course) they would then have something which their great grandchildren would delight to read, and three party oracles to boot, and they would be enough to keep one neighborhood in a feud.

[Maine Farmer.]

HORTICULTURAL SOCIETY.—At the stated meeting of the Society for the present month, several members exhibited plants or other objects of horticultural interest. A notice of some of them is annexed:

The finest plant exhibited was a really splendid specimen of Azalia, (the Phenicea of Loddiges) in full flower. The bush was upwards of three feet high, well branched from the earth upwards, and covered with a profusion of delicately tinted purple blossoms, each about two inches in diameter. It was certainly well calculated to furnish additional proof, (were any such necessary) of the reward which a careful culture of the Azalia will afford the amateur. The species in question is undoubtedly a very fine one, and when contrasted with the scarlet and white flowered kinds, the effect produced by the varied hues of their intermingled blossoms, whether in the parlor or the conservatory, is quite enchanting—Exhibited by Mr. KURTZ.

Two specimens from South America were sent by Dr. COHEN to the Society. One the fruit of a Palm tree, supposed a species of Caryocar. The other a most singular production, bristled on every side with enormous spines of most repulsive appearance. It is a dried portion of the stem of a Cereus, supposed to be true *Spinosisimus*. At all events, its claim to at

least a similar appellation cannot be disputed. Both these were reserved for the Museum of the Society.

ZEBULON WATERS, Esq. presented a most charming production discovered by him last spring in a wild state in the neighborhood of this city—the double flowered Wood Anemone, (*Anemone Thalictroides*.) The single variety is quite plentiful in our woods, but the double one is very rare. It is well worthy of cultivation, and the delicate beauty of its rose tinted blossoms, will amply repay whatever trouble may be taken with it.

Two roses, exhibited by Mr. SAM'L. FEAST, excited general interest. They are quite new varieties, raised by him from seeds. One was obtained from seeds of the common tea rose, very probably with an admixture of some other variety. The appearance of the plant and its foliage, is particularly neat; it grows very freely, and flowers beautifully. Blossoms large, and well colored, borne on graceful stems, with a singular fragrance, like that of the common tea rose and the China rose combined. It has been named, in compliment to an amateur of the city, Kurtz's Rose, or *Rosa Thea*, var. *Kurtzii*.

The other rose, likewise obtained from seed by Mr. Feast, is the most curious rose perhaps ever produced. It is a dwarf, and so completely does it vindicate its title to that appellation that although it has now reached the termination of its third year, the bush is not yet quite *two inches* in height! It is a sturdy little affair, well furnished with branches and clothed with leaves of surprising neatness. The blossoms are quite as extraordinary; they are double, of a beautiful color and very well formed, of a little more than half the diameter of a five cent piece! It is a real *bijou*, and has been named Master Burke, having flowered for the first time, during the period when the young Roscius was performing here on his first engagement.

We learn that a special meeting of the Society will be held on Saturday next, when the members are again expected to exhibit specimens.—*American*.

PECULIAR METHOD OF TURNING WOOL INTO FUR. The wool growers of Podolia and the Ukraine, and also in the Asiatic province of Astrachan, have a peculiar method of turning wool into fur. The lamb, after a fortnight's growth, is taken from the ewe, nourished with milk and the best herbage, and wrapped up as tight as possible in a linen covering, which is daily moistened with warm water, and is occasionally enlarged as the animal increases in size. In this manner the wool becomes soft and curly, and is by degrees changed into shining beautiful locks. This is the kind of fur which passes under the name of Astrachan, and is considered on the continent as the most genteel lining in winter cloaks. Similar trials with German sheep have been attended with the same success. The Saxon breed of sheep have, within the last ten years, superseded the merinos, and their wool is of superior quality.

FOREIGN MARKETS.

LIVERPOOL, March 7.

Nothing especial has occurred in our market this week, except perhaps that we have had a good demand for cotton, sales large (but more particularly in Brazil, which are 1d higher in several descriptions) and a better feeling on the whole prevailing. In American cotton no change has taken place in prices.

Naval stores are dropping, both tar and turpentine. In other articles we have scarcely any thing of importance to report.

Sales March 4th.—There has been an extensive demand in the cotton market to-day, and the transactions are estimated at 3500 Bahias at 7 5/8 d, and Maranhans 5 5/8 to 91, and in American descriptions 2500 bales from 64 to 81d.

AGRICULTURE.

(From Proceedings of the N. Y. State Agricul. Society.)

ON THE USE OF LIME IN AGRICULTURE.

Westchester, Penn. December 17, 1852.

DEAR SIR.—Your letter, containing a number of queries relative to the operation and utility of lime, in the process of agriculture, was received in the early part of June last; but as I have been much engaged, during the past summer, with duties which required all my attention,—and, as your letter intimated that answers furnished “any time during the present year” would be in season for your purposes.—I have taken the liberty to postpone my reply until now.

I proceed, then, with great pleasure, to furnish you with such facts and remarks as my opportunities for observation have enabled me to offer. With a view to render the answers more explicit and satisfactory, I will annex them, *seriatim*, to your several inquiries.

Query I. “Upon what lands does lime operate most beneficially?”

1. In regard to geological formation.—as primitive, transition, secondary, and alluvial?
2. In reference to the soil,—as sand, clay, lime and vegetable matter?
3. As indicated by natural growth of timber and plants?

Answer. My residence has always been in a primitive region, and my observations very much limited to agricultural processes in soils upon that formation. The prevailing rock here is gneiss,—with occasional beds, or veins, of hornblende, greenstone and scinite. About five miles to the north of us, is the great valley of transition limestone, stretching from northeast to southwest; and immediately on the southern side of this valley, running parallel with it, is a broken ridge of hills, formed of mica slate,—with beds of serpentine rock and hornblende, on the side next to the gneiss rock, on the southeast. Over the gneiss rock, and among the hornblende, the soil is generally a stiff loam; and there, I think, the best effects are perceptible from a given quantity of lime. On the soil overlaying the schistose rocks, the good effects of lime are sufficiently obvious, under the management of skilful farmers; but the benefits seem to be less permanent. On the serpentine rock the soil is extremely sterile,—and neither lime nor barnyard manure can be used with much advantage. In the limestone soil of the great valley, where one would suppose it was already redundant, lime is used with advantage; and much heavier dressings are put on, than in the adjacent districts. I cannot furnish the rationale of this practice; but I believe the fact is established, that more lime is required to produce the same beneficial effect upon soils resting on limestone rock, than upon those overlaying gneiss,—and perhaps some other primitive rocks.

I have had no opportunity to witness the effect of lime upon secondary, and strictly alluvial, formations; but the above circumstance has led me to suspect, that the same quantity of lime would not be so signally beneficial in secondary, as it is in certain primitive formations.

Lime, undoubtedly, has a good effect in soils which are sandy,—even where sand predominates; but I believe its meliorating properties are most conspicuous in a clay soil,—or rather in a stiff loam. A good proportion of decomposed vegetable matter adds greatly to the beneficial effects of lime; and hence our farmers are desirous to mingle as much barnyard manure as possible with their lime dressings,—and to get their fields into what is called a good sod, or turf,—full of grass roots. Then a dressing of lime has an admirable effect. The soils indicated by a natural

growth of black oak, (*Quercus tinctoria*), walnut (*Juglans nigra*), and poplar (*Liriodendron*),—and those in which such grasses as the *poas* and *festuacs* best flourish, are generally most signally benefited by the use of lime. In short, I may observe, that lime has been found more or less beneficial in every description of soil, in this district. It is most so, on hilly, or rolling lands, where clay predominates,—less permanently so, among the mica slate,—and least of all, on the magnesian rocks. The soil on these last is rarely worth cultivating.

Query II. “What quantity of lime is applied to the acre, upon different soils, at a single dressing, and during a period of years?”

Answer. The quantity of lime, per acre, which can be used advantageously, varies with the condition and original character of the soil. Highly improved land will bear a heavier dressing than poor land. On a soil of medium condition, the usual dressing is 40 to 50 bushels per acre. A deep, rich soil, or limestone land in the great valley, will receive 70 to 80 (and I am told even 100) bushels to the acre, with advantage. On very poor land, 20 to 30 bushels per acre, is deemed most advantageous to commence with. It is usually repeated every five or six years—i. e. every time the field comes in turn to be broken up with the plough; and as the land improves, the quantity of lime is increased. The prevailing practice here, is, to plough down the sod, or lay, in the fall or early in the spring,—harrow it once,—and then spread the lime (previously slaked to a powder) preparatory to planting the field with Indian corn. Every field, in rotation, receives this kind of dressing; and as our farms are mostly divided into about half a dozen fields, the dressing of course comes once in six years, more or less according to the number of the fields. Some enterprising farmers, however, give their fields an intermediate dressing, on the sod, after they come into grass; which I consider an excellent practice,—tending rapidly to improve the condition of the land.

Query III. “Is it applied in a caustic or an effete state?”

Answer. It is usually obtained in a caustic state from the kiln,—deposited in heaps in the field where it is to be spread, and water sufficient to slake it to a powder, is then thrown upon it. As soon as slaked, it is loaded into carts, and men with shovels distribute it as equally as possible over the ground. It is generally considered best to put it on the ground whilst it is fresh, or warm, as the phrase is; and it is certainly easier to spread it equally, while in a light pulverised state, than after it gets much wet with rains. I am inclined to think, too, it is better for the land, when applied fresh from the kiln.

Query IV. “To what crops is it most advantageously applied, and at what seasons?”

Answer. It is usually applied, as already intimated, to the crop of Indian corn, in the spring of the year—say the month of April. Occasionally it is applied, preparatory to sowing wheat, in autumn. When used as a top dressing, on the sod, it is generally applied in the fall—say November. The prevailing impression is, that it is most advantageously applied to the Indian corn crop; and hence the general practice. But the truth is, it is highly advantageous at any, and at all seasons; and our shrewd old farmers have a saying,—“Get your lime on for your corn, if you can,—but be sure you get it on the land, some time in the year.”

Query V. “How is it incorporated with the soil—by the plough or the harrow? and is it applied in any case as a top dressing to grass and to grains, and with what effect?”

grain on the inverted sod,—and, the ensuing spring, to manure the same field for a barley crop;—or, to reserve the manure until the succeeding autumn, and apply it to the wheat crop. It is not well settled which of these is the better practice. Each has its advocates; but it is most usual to reserve the manure for the wheat.

Answer. As already stated, after the sod is ploughed down for Indian corn, it is usually harrowed once, to render the surface more uniform. The lime is spread as equally as possible over the field,—and then the ground is well harrowed in different directions, in order to incorporate the lime with the soil. Soon afterwards, the field is marked out, and planted with corn. The plough is rarely, if ever used, for the purpose alluded to. I have mentioned above, that lime is occasionally used as a top dressing, for grass. It appears to be particularly beneficial to that crop; and answers extremely well, when applied in that manner. The practice of applying it to Indian corn, as above related, is, however, chiefly followed; and the application of a dressing to each field, in rotation, causes as much labor and expense every year, as our farmers generally are willing to incur. Lime has rarely been used as a top dressing to grain crops, within my knowledge.

Query VI. “What is the ordinary cost, per acre, of liming, and the relative profits, in increased products, of a period of years?”

Answer. Quick lime, at the kilns, usually costs twelve and a half cents per bushel. The farmers generally haul it with their own teams; and the additional expense depends, of course, materially upon the distance. It is frequently hauled by them a distance of 8, 10, and even 12 miles. The average, perhaps, is about 5 or 6 miles. It is delivered to me by the lime burners, (a distance of near 6 miles,) at 18 cents per bushel. At the rate of 40 bushels to the acre, the cost, at 18 cents, would be \$7.20 cts. per acre. It is difficult to estimate, with precision, the relative profits, in increased products: But I can safely say, from my own experience, on a small farm of middling quality, that two dressings of lime at the at the above rate, in the course of 8 or 9 years have more than trebled the products of the land to which it was applied, both in grain and grass. It is to be understood, however, that the system of ploughing only so much ground as could be well manured, was adopted at the same time. I may also observe, generally, that the farmers of this district, (who are shrewd economists,) are so well convinced of the beneficial effects of liming, that, costly as its application seems to be, they are unanimous in sparing no effort to procure it. Lime has been found to be peculiarly favorable to the growth of pasture, when the farm is otherwise well managed; and, as our farmers are mostly in the practice of feeding cattle, they resort to liming as an indispensable auxiliary to successful grazing.

Query VII. “Is lime applied with yard manures, or earthy composts, and with what results?”

Answer. I have already intimated that vegetable matters, and especially yard manures, are highly important in conjunction with lime. Both are valuable, even when used separately; but when combined, the effect is most complete. It to this be added, that great secret of good farming, viz: to plough only so much ground as can be well manured,—the state of agriculture may be considered nearly perfect.

Lime is, in some instances, added to earthy composts, preparatory to distribution on the field: But it is doubtful whether the extra labor of this method is compensated by any peculiar advantages. It is not generally practised.

Query VIII. “Is powdered limestone (carbonate of lime) applied to soils; and if so, does it induce fertility otherwise than by mechanically ameliorating their texture?”

Answer. No instance of powdered limestone being applied to soils has come under my notice. I can, therefore, form but a very imperfect opinion of its utility. If it were even as beneficial as quick lime, (which I doubt,) I apprehend it could not be procured and applied with less cost and labor.

Query IX. “On what soils, if any, in your neighborhood, is lime found to be inoperative, as a fertilizing application; and the cause of its failure?”

* The yard manure is not usually mingled with the lime, when the latter is first applied. The practice is, to lime the Indian corn ground, prior to planting that

Answer. There is no soil in this district, deemed worthy of cultivation, on which lime is *wholly* inoperative as a fertilizer. On some sterile, slaty ridges, and on magnesian rocks, it has indeed but a slight effect; and even the benefits of barnyard manure are very transient. In low, swampy grounds, also, unless they are previously well drained, the labor of applying lime is pretty much thrown away. There seems to be something in the constitution of magnesian rocks peculiarly unfriendly to the growth of the more valuable plants. Indeed, there are patches of the soil perfectly destitute of all vegetation. Repeated attempts have been made to cultivate the bases of our serpentine banks; but neither lime, nor manure, will enable the farmer to obtain more than a light crop of small grain. Neither clover, nor the valuable grasses can be induced to take root and flourish in the ungenial soil. It is, therefore, almost universally neglected.

I have thus endeavored, (in rather a desultory manner, I confess,) to answer your queries according to my best judgment. If what I have furnished shall in any degree tend to make the subject better understood, I shall be amply gratified. With great respect, I have the honor to be, your obedient servant,

WM. DARLINGTON.

JESSE BULL, Esq. Cor. Sec. &c.

(From the Virginia Farmer.)

CULTURE OF CORN.

Indian Creek, Feb. 1, 1833.

DEAR SIR,—In the last number of the Virginia Farmer, it is stated that, a Mr. Megginson of Buckingham, made last year, from one acre of land, one hundred and eight and a half bushels of Indian corn. That was certainly a great product, and shews conclusively the value of manure; and surely ought to stimulate every farmer to use all means in his power to raise as much of that indispensable article towards good and profitable farming, as are within his reach. I have read Mr. Megginson's letter inserted in your paper, wherein he states his manner of preparing land for corn, and the subsequent cultivation. This gentleman is certainly a practical farmer, whose examples (in general, as far as they are developed by his letter,) are worthy of imitation. Under a hope that others of more experience than myself may be induced to give us their lights on the subject of agriculture—I beg leave to state the manner that I prepare my corn land, and the mode of cultivation afterwards. I commence on or about the first of November to follow with a two horse McCormick plough, (the best kind I ever saw, and I believe the best I ever shall see,) ploughing about five inches deep. The last of March I bed my land five feet, with three furrows, and crop it three feet apart, and commence planting as soon afterwards as I can, allowing the plough or ploughs that are cropping sufficient time to keep ahead of the planters; of course I plant my corn five feet by three, putting three grains in the hill, or rather the hole. If the spring is tolerably favorable, the corn will be large enough to thin out one stalk about the 20th of May:—About this time I put in the cultivator, made in a triangular form, having in it four hoes and one tooth, the latter is fixed in the hinder end of the right side; the advantage of the tooth is found in running immediately along side of the young corn without covering it, by throwing dirt on it, two strokes of this cultivator are sufficient in a row. As soon as I get over my crop the wide way (as we call it) I take the tooth out of the cultivator and put a hoe in its place and commence cropping the narrow way; the corn is then large enough to bear the little dirt that is thrown to it by the cultivator. My object in crossing, is to break and pulverize the bed, and level the ground. After the crop is passed over in this way, which is speedily done, one stroke being sufficient, I cross no more and continue to work the corn with the cultivator alone, until a short time

before harvest, when I put in a one horse plough, and run two furrows on each side of the corn, throwing the earth up pretty well to the corn, the cultivator will at one furrow cut out that which is unploughed in the middle. I omitted to state that, I commence hoeing my corn or rather chopping around it when I first start the cultivator, taking out one stalk if there are three, thereby thinning the corn gradually. The ploughing is intended to facilitate and lessen the hoe work the second hoeing and prevent the grass from getting a hold during harvest; a time when we have to take all our hands out of the corn field. After harvest the cultivator is again used, and nothing else except the hoe. I think Mr. Megginson is mistaken in saying that corn ought not to be worked after it begins to joint; I know by several years' experience, that corn ought to be harrowed or stirred with a cultivator (the latter I prefer) until the first of August. I am under the impression that he plants his corn too thick, unless in a very highly improved land. It is true he will have more ears, but I doubt very much if more bushels would not be made by planting five and three, one stalk, unless the land is rich enough to produce ten or twelve barrels to the acre, then two stalks may be safely left. One cultivator will do as much work in a day as two, or perhaps three ploughs, and according to the foregoing mode of cultivating a corn crop, much is saved, less team is necessary, fewer hands will be required, and the crop cultivated in a manner neater and better calculated to insure a good crop. If you have none of McCormick's ploughs in your county, I would earnestly press you to get one, No. 10. You can get them in Fredericksburg and perhaps in Richmond. I have thus roughly given you my mode of cultivating a corn crop: there is nothing in it theoretical, and I am confident that it is the safest mode in this part of Virginia, at least to insure a good crop. If you think any good may be done by the above (except filling up a place in your paper) you can use them as you please.

Yours,

RALPH EDMOND.

(From the Genesee Farmer.)

INDIAN CORN.

Greatfield, 2 mo. 1, 1833.

In the chapter on Indian corn, (*Zea mays*.) in the Library of Entertaining Knowledge, it is said, "Of this plant only one species is known, but there are several varieties." It would be hard to determine whether the writer meant to include the Valparaiso corn among these varieties, or whether he meant to exclude it entirely as an Indian corn. Either case would be incorrect. The Valparaiso or cross corn, constitutes another species of *Zea*, named *Z. curagua*, distinguished by its serrated leaves; and the grain when roasted splits regularly into the form of a cross. It is represented as a smaller species, and was introduced into Britain in 1824.

It is also said, "American Indian corn is the largest known variety of maize. It is found growing wild in many of the West Indian islands as well as in the central parts of America. It will rarely come to maturity in northern climates; and could never be securely relied on as a crop in any part of Europe."† All this may be true, and yet by not telling the whole truth, it leads on directly to error. The small variety found with the Indians by the first settlers of New England soon after they landed at Plymouth, was as decidedly an American variety as that which grew in the West Indies. This same remark will apply to the variety cultivated by the Mandans on the Missouri; and which ripens, according to Nuttall, in a climate where no other variety could exist.

It is further said, "In the Mexican states its productiveness is calculated to excite wonder, if not to provoke incredulity on the part of European agriculturists. Some particularly favored spots have

been known to yield an increase of eight hundred for one."* Much of the wonder and incredulity would abate however if the same facts were stated in a different manner. Comparing this crop with that of wheat, or of other kinds of grain commonly cultivated in Europe, the product seems enormous; for if we say one bushel of wheat will seed an acre, and one acre will produce forty bushels, the increase is only one-twentieth part of the Mexican crop, and a vague idea of some eight hundred bushels to the acre is presented. But when we inquire how much Indian corn have they to the acre? and then learn that it may not greatly exceed one hundred bushels, we come to understand it differently, having discovered that more is owing to the small quantity of seed corn required, than to the magnitude of the crop.

By good culture, as great a return may be had from many spots within the 44th degree of north latitude. The ears of the most common variety of Indian corn cultivated in the Genesee country, will average nearly ten inches in length, with eight or ten rows, each containing fifty grains; and consequently each ear contains four hundred or five hundred grains. Now a stalk of Indian corn in a fertile soil with good tillage and room enough will produce at least two ears, and the yield will be from eight hundred to one thousand for one. If we take the quantity usually planted in our fields, however, and compare it with our greatest crops, the proportionate yield will be greatly reduced; for it is held the best policy to use plenty of seed to guard against accidents, or the depredations of animals; and a vacancy is more to be feared than a surplusage, although each stalk will be less productive.

In speaking therefore of eight hundred to one, we know not whether the yield is great or moderate, for one plant treated in the best manner in a rich soil may produce more than two thousand to one, even when the yield, averaging the whole field together, is not fifty bushels to the acre.

"In the United States of America," says the same author, "the Indians—these simple and untought people, discovered and practiced a method of preserving their grain after harvest which afforded a certain protection against the ravages of insects. Their method was to separate the corn from the cobb [cob] as soon as the harvest was finished: to dry it thoroughly by exposure to the sun, and to a current of air; and then to deposit it in holes dug out of the earth in dry situations, lining these holes with mats of dried grass, and covering them with earth, so as completely to prevent the access of air."‡

The United States of America is a vast country, comprising a great many Indian nations, differing in manners as well as language; and therefore in speaking of their peculiarities, it is always safer and more satisfactory to name the nation in which such customs prevail. The only account which I recollect, of the Indian mode of storing their corn, is contained in the history of the first settlers of Massachusetts. An exploring party "discovered hillocks of raised earth" which they conjectured to be the graves of the Indians; but on opening one, to their great surprise, they found it to contain Indian corn which was "still in the ear." In this part of the United States it is commonly kept in the ears through the winter. Instead of excluding the air, corn cribs are constructed so as to admit as much of it as possible. We know of no insect that attacks Indian corn after it is ripe and husked.

Some farmers have said that *topping* and *blading* hastened the ripening of Indian corn; and this author supposes the operation also "affords more nutriment to the grain;" but I do not discover how the entire removal of one half the plant could produce any such effect.

The practice in some districts may have induced him to believe that the ears when ripe "must be

plucked off together with the husks and conveyed all once in carts to the barn." There is no necessity for this practice, and accordingly it is local. It is commonly held to be a saving of labor to husk it on the stalk, whether the stalks are cut and stacked, or whether they are left standing in the field. D. T.

(From the New England Farmer.)

SELECTION OF SEEDS, IMPROVED VEGETABLES, &c.

Camden, N. J. 3d month, 1, 1833.

Respected Friend,—I observed in the N. E. Farmer, under the head Agricultural Essays, on the subject of seeds, the author says, "seeds not natural to the climate degenerate and should be changed annually," and, "that corn, barley, oats, and seeds of all kinds should be changed every year, it will pay the farmer four-fold for the trouble of doing it." This is a subject of great importance to the agriculturist, and should be fully investigated from actual experiment before it is implicitly adopted, as it is attended with much trouble and expense, in making these repeated changes. I believe some benefit may result from making changes and introducing a greater variety of sorts, and when we find good and productive kinds, of either vegetables or grain we had better endeavor to continue to improve them ourselves by proper care and cultivation and saving of the best for seed than depend upon our neighbor's care. I, however, can speak from about forty years of observation and experience, that seeds not natural to our climate, instead of "degenerating" by care and proper cultivation have a tendency naturally to become more acclimated to our climate, and instead of making these annual changes it would be better for the farmer to endeavor to improve these good sorts than to be annually changing with his neighbors.

I expect it will be admitted that much has been effected in the improvement of the breeds of cattle and sheep, sometimes by a cross and again by selecting the most perfect in form and size, and raising a stock from the best milkers, for instance the Shorthorn Durham, and Alderney breed, also Bakewell's celebrated sheep, these have all been derived from crosses, and selecting the most perfect. The same course I think will be found to produce the same beneficial results of mixing some kinds of seeds of the same species and improve from the best. I will now give an instance of a trial made by one of my ancestors more than sixty years ago; he planted some of the small kind of chicken corn (or as the children call it pop corn, from its bursting so handsomely when roasted on a shovel over the fire) which usually produces from four to eight ears on a stalk, with the common large Indian corn, and improved from that mixture, for a few years, until he got what he thought a good and perfect kind. This small sort was also very productive in leaves as well as in ears, which is of great importance as regards fodder, as some of our kinds produce but few leaves and are not worth much for that purpose. The product of this mixture is, generally, from two to four and sometimes six ears to a stalk. This same kind of corn has been annually grown on the same farm since that period without any other mixture, and to this time the usual product is from fifty to seventy-five bushels per acre. On the same farm and about that period and by the same person the like results took place with squashes; they are still grown there, and do not degenerate either in flavor or quantity.

About twenty years since, dining with a friend of mine about 80 miles from my home, I observed some potatoes brought on the table. I was struck with their unusual white appearance, and their flavor was also excellent (at that time we rarely saw any but what were of a yellow appearance.) On inquiry I found he had procured them from Long Island, about

two years before. They had been recently brought from England, and were called Foxites or Fox's seedlings. I obtained a few and planted them, and have continued to do so, from that period to the present time without any change with my neighbors, they continue to be as good in quality and as productive in quantity, but I am always careful not to make use of the best for cooking or sale and plant the refuse. When this is done I do not marvel at the common complaint of seeds degenerating. It is a good practice and should be done every few years, to be careful when the potato crop is gathering, when a large number of good sized fair potatoes are found attached to a stalk to put them by and plant them separately for seed. I think it of importance for farmers not too hastily to adopt theory without being tested by actual experiment, by annually changing their seeds. I have found from an experience of nearly forty years a benefit from my practice of saving all kinds of seeds designed to plant, to make the selection from the best and most productive. This rule will apply to rye or wheat as well as all other seeds. The rye I now have, is the product (many years since) from a remarkably large seed, and the grain much whiter than common, and it is now generally sown in this neighborhood. Indian corn of any kind can be improved. It is my usual practice to go through the field previous to gathering the crop, and make the selection from the best shaped stalk with the most leaves and most productive in ears, attending also to the time of ripening, and by sowing some of the most early we can improve as to the time of ripening. By taking this care with our early pease we get them much earlier for market than formerly. I wish our farmers, more generally, would try the experiment for themselves of making a careful selection of seeds endeavoring to improve the kinds, and I think they would find as proportionate a benefit from it as they do from raising stock from the best cattle.

Respectfully, thy friend, BENJAMIN COOPER.

HORTICULTURE.

(From the New York Farmer.)

IMPORTANCE OF THE APPLE.—DIRECTIONS FOR THE MANAGEMENT OF THE ORCHARD.

Mr. Editor,—During a residence of some few months in this country, your interesting journal has frequently fallen into my hands; and as I perceive that you occasionally devote a portion of it to the dissemination of agricultural information, I have determined, if it meets your approbation, to contribute the result of my observations through the medium of the same. I am a citizen of the world, and have had frequent opportunities of comparing the state of agriculture in different parts of it, but I have never met with a place so eminently adapted to farming purposes as Long Island. I have no doubt the system pursued by your farmers is, in general, best adapted to their interests; for I have noticed, during my peregrinations, that the capabilities of a country are best known to the inhabitants,—that is to say, I believe that a man will soon find out from half a dozen different crops the one which is best adapted to his soil, and will produce the most money. But there is one crop which, under proper management, can be made more productive than any your farmers cultivate, and which, as my observation has extended, has received very little attention—I mean the apple. It would almost be questioning the good sense of your farmers, in this age of general intelligence, to ask them if they did not know that this country is the most favorable on the globe for the culture of this fruit; and yet it really appears they know nothing of the matter. I am told that the celebrated Newtown pippin originated on Long Island, and I know it is thought to combine more good qualities than any apple ever cultivated; many of these trees are annually imported into

Europe, but none of them produce fruit equal to that from under the genial influence of your sun; the fruit itself is imported in considerable quantities, and it is no uncommon thing to see placards of "Newtown pippins" posted in the confectioners' windows as you pass through the streets of London; it sells at a very high price, frequently as high as six or eight cents for a single apple. With a knowledge of these facts, the cultivation of this admirable fruit should become an object of primary importance.

Now, it has been satisfactorily proved that, with proper care in trimming and manuring, together with a judicious selection of the stocks (a matter of all importance) six or at most eight years are time enough for trees to attain sufficient maturity to produce in three years as much as will pay all the expenses attendant upon their culture; that is to say, by the time they are eleven years old they will have paid for themselves; after this period they are rapidly becoming more productive, and require less attention as they increase in size, providing they have been properly trimmed every year, and manured at least every other year, till they begin to produce plentifully. By this time they will have become sufficiently established to draw their nourishment from the surrounding soil, and the manure bestowed upon the undergrowth. But your farmers tell me their orchards will not grow so fast; they say it requires twenty years for them to attain a full bearing state. This is true, and I will tell you the reason: they have been so long accustomed to consider them unprofitable, that what little attention they bestow (if perchance they should think them worth any) is given unwillingly, and with no idea of reimbursement. The consequence of this is that the farmer, instead of assigning a suitable time and attention to his orchards with as much care as the rest of his farm, takes some odd moment, whether suitable or otherwise, gives them a superficial trimming or rather mangling, and thus leaves them, without any protection from the weather, which immediately commences its depredations upon the tree, and in a few years it is either completely destroyed, or becomes so diseased by the rot and canker, (both produced by the hacking system,) as to become a mere incumbrance, so that the Indian corn or potatoes, which might grow where it stands, would be worth ten times as much as its fruit. The great importance of applying some kind of dressing to trees after trimming appears to be almost entirely overlooked. What would be thought of a surgeon who should amputate a limb, and leave the bleeding stump exposed without any protection from injury, or any application to prevent the atmospheric influence upon the grievous wound he had inflicted?

Now, it is almost as preposterous to suppose the one would, under such circumstances, do as well as the other. In either case, no reasonable man will doubt the utility of some protection, in order to allow the healing process to go on uninterruptedly. With regard to the nature of the application, it is of little consequence what it is composed of, provided it is not of an acrid character. I have found, by experience, that a composition of equal parts of fresh cowdung and common clay answers the purpose admirably. It forms a most tenacious plaster, and resists the influence of the sun and rain, which is the only object in view; it has this advantage over most others, it costs nothing, and can always be had. I have tried most of the applications recommended in books and papers—Forsyth's among the rest; they are all good, provided they will stand the weather. None of their component parts are received into the circulating juices of the tree; the only object in applying them is to prevent the pernicious influence of the sun and rain, together with those drying winds which cause the extremities of the limbs to crack open and afford admission to moisture; whilst in consequence of the exposure to the sun, the sap which exudes, and is intended by nature to heal the wound, evaporates, and leaves the tree without any means of effecting a

cure. This evil is also produced by suffering two grafts to grow upon the same stock: even if there should be two separate branches and a handsome bifurcation which it would grieve you to destroy, nevertheless, you should either cut off one (the most horizontal one of course,) and graft the other, or if the stock will admit of it, cut and graft below both. This has frequently been told, and it is surprising it is not always practised. Turn your eye to the next orchard, and if you do not see one example of this pernicious practice, take my word for it, the man knew how to graft his trees. The philosophy of the thing is as plain as a pike-staff: if you leave both grafts, you impose upon good nature; you literally want two trees to grow where nature meant there should be but one, which one will prove a handsomer more durable, and fruitful tree (aye, and a larger one too, if size is your object) than if you had left both. For the same reason that I recommend removing one graft, I would urge the importance of beginning to trim early. Begin as soon as the graft expands. If one bud should show a disposition to outgrow the others, rub all off but that one—it will grow the faster, you will lose nothing by it, as it will, nine times out of ten, exhaust the others so completely as to become the leading shoot, and will throw out lateral branches enough to form a handsome head without their assistance.

The graft should always be secured by tying a long stick round the stock, suffering it to project two feet above the graft to which it should be tied as fast as it grows. This rubbing off the buds is the first year's trimming; the next you can select the most promising shoots, and those which spread handsomely, cutting off the others with a sharp knife—every shoot you cut off affords additional nourishment to those which remain—an immense deal of labor is thus saved by *beginning to trim early*; it is much easier to cut off a limb with a penknife than an axe—besides this, you can see much better which it is proper to remove; you can make your tree spread beautifully; and thus, what would after six or seven years of neglect require a week to perform, may be done before breakfast, and become a pleasing employment in the one case—a task in the other. You should take care to prevent the access of the rain to the cleft which is made for the graft, as it would prove very injurious. In order to do this with little trouble, when you set your grafts, instead of the ordinary daubing with clay, use a composition of equal parts of wax and tallow, this will keep out the weather, and will not melt in the heat of summer. I have known it to remain upon the tree four years as good as when first applied; it is much more convenient than mud, and will be found an excellent preparation—the addition of a little rosin will make it more tenacious—that of ochre, as lately recommended, is certainly of no kind of use. If the bark of your trees appears unthrifty or infested with insects, apply soft soap, the alkali kills the insects and causes the bark to assume an uncommonly vigorous appearance. I shall enumerate a few more errors which cannot fail to strike the most unobservant beholder—planting too near, grafting too low, and suffering the grass to grow round the roots of young trees. By planting too near you deprive your trees of free access to the sun, this spoils the fruit as well as the crop which grows, or rather tries to grow, beneath them. It makes little difference to a man who has a hundred acres of land whether his orchard occupies four, six, or eight acres; indeed, if trees are planted 60 feet apart—and I would never have them nearer—it is doubtful if they would make any perceptible difference in the crop; if this be true, where is the necessity of planting them 20 feet apart, thereby spoiling trees, crop and all; it is certainly the best policy to plant six acres with the same number of trees that are commonly planted upon four. In the next place, graft them ten feet high, so that your ploughman can drive under without knocking his hat off; the advantages and disadvantages attending this

practice are the same as those in planting too near. Suffering the grass to grow round the roots of young trees is an evil of prominent magnitude, and I will venture to say causes the destruction of more young orchards than all the others together. Those who pretend to any solicitude about their orchards, say that the ploughing and manuring for the undergrowth is all that is requisite for the trees; but even if this would, under ordinary circumstances be sufficient, they forget that they are usually grafted so low that the plough cannot get near them. There is nothing like actual demonstration and comparison. Let any man select half a dozen trees in his orchard, give them a wheelbarrow load of manure, and then fall to and dig it in honestly and fairly, and compare the produce with six of the others, there is no doubt he would be pleased with the result. But I have trespassed long enough on the patience of you, Mr. Editor, as well as your readers, and will only add one good old maxim that I used to read in my youthful days, "whatever is worth doing at all, is worth doing well, and it is impossible to do any thing well without attention."

Part of the above remarks were published several years ago in one of your neighboring publications, and I now communicate them for your interesting Magazine.

E. H. D.

(From the Library of Agricultural and Horticultural Knowledge.)

ORCHARD IN MINIATURE.

An Orchard in Miniature, as proposed by a correspondent in the *Gardener's Magazine*, may, where space is an object, be adopted with advantage. "By planting the proper sorts, apples may be grown on as small a space of ground as gooseberries; and a small or large square, according to the size of families, appropriated to apples, will grow every year enough to supply their wants. I am not vain enough to think that I am alone in growing them in this way, as I should think horticultural economy would prompt many besides myself to gratify their eyes, their pockets, and their appetites in so easy a way. I have my ground a strong clay mold, trenched two feet deep, in December; as soon as it is settled, say a fortnight after trenching, taking advantage of a frosty morning, the holes are opened and left for the frost to mellow. February is the best month for planting on heavy ground; by that time the earth taken from the holes will be in a fine pulverized state. The holes need not be very large; two feet over, and one and a half deep, will be enough; with some rich soils there will be no occasion for trenching; but then the holes must be larger, say three feet over, and two feet deep; the plants must be six feet apart every way; I arrange mine in quincunx. With a six feet measuring stick this is done with scarcely any trouble. I really do not know any sight more pleasing to a domestic mind (or what fruit contributes more to our comfort than the apple?) than this orchard in miniature, when covered with bloom, and again when laden with fruit, as they seldom miss bearing in abundance.

This plan will not extend to the strong-growing sorts, as they are not easily kept within bounds; but the following six, will amply repay the trouble and trifling expense of planting. I have placed them in the order of their ripening:—Mank's codlin, Hawthornden, Kerry pippin, Downtown's pippin, Christie's pippin, and the old golden pippin. The trees must be chosen with stems not exceeding one foot six inches in height. In September I look over the trees, take off superfluous wood, and shorten the long shoots; this strengthens the bloom buds, which are formed abundantly upon the young wood of all the sorts named. Of course in doing this, an eye must be had to the formation of the trees, which ought to be gradually brought into a handsome round bush. For the first five years a row of strawberries may be grown, between each row of apples, or any other dwarf light crop; but strawberries are most in keep-

ing, a word, which, in every gardening operation ought not be lost sight of. Let me add—they ought to be worked on Paradise stocks, or the small wild crab (mine are on the last) not by any means on the free stock raised from apple pips, the very worst that can be used.

(From the Genesee Farmer.)

AQUATIC PLANTS.

For the benefit of such horticulturists as have in their gardens a small but durable stream, I copy the following paragraphs from the letter of a botanical friend, which I received a few months ago. Many of our sub-aquatic plants are of great beauty; and some of them will grow in a prepared soil remote from water; but others like true aquatics, can only be successfully cultivated where there is a perennial fountain to supply their wants.

"I lately saw the *Sarracenia purpurea* growing very finely in a garden. It was taken from a swamp, and planted in a moist soil close to a small but constant stream. I mention it, because it is sure to dwindle and perish in common earth.

"Oh! I have seen the *Cyanus luteus* in flower. It is really one of the finest plants I ever saw: the flowers are from three to five inches in diameter, and if they were opened out, would measure seven or eight inches across. When fresh, their fragrance to me is very grateful. It should be cultivated wherever it can be got to grow; it requires a small pond of water two or three feet deep with a muddy bottom.

"There is in this neighborhood a *Sagittaria* with double flowers that is said to be splendid, but I have not yet seen it.—P. S. A friend has just handed me a bunch of the double *Sagittaria*, and it is a curiosity worth trying to get."

There are many subscribers to the Genesee Farmer, horticulturists, who have, or who may have, fountains or durable streams in their gardens; and who at a very moderate expense could prepare an exhibition worth a day's journey to see. Only to think of an aquarium which should include the water-loving plants of the Genesee country alone. The white and fragrant pond lily in the centre—the blue flowered *Pontederia* with its fine foliage near the shore—the silvery spikes of the *Menyanthes* on the margin—the tall and elegant *Cypripedium* on the wet soil, shading the water-cups of the *Sarracenia*—and admitting along side the more brilliant *Calopogon*—the fringed *Orchis*—the fragrant *Pogonia*—and the fine purple of the leafless *A. elusa*. Not far from these, the hooded *Utricularias* with their golden blossoms might intermix with the rosy spikes of the amphibious *Polygonum*—and later—in autumn—the striped flowers of the delicate *Parnassia* with the dewy purple of the *Gerardia*. A few bunches of the wild rice (two kinds) would make a noble display. Even in the edge of winter, the red fruit of the cranberry, projecting from the spongy moss, would be brightly reflected from the water; and the *Prinos*, though leafless at that dreary season, would glitter in the most brilliant scarlet.

Twice as many more might be named, and congregated with representatives from other parts of the temperate zone. The rosy flowers of the Chinese sacred bean (*Cyanus*) would be glorious among the yellow of our native species; and the superb lily, only rising in full vigor from a wet and fertile soil, might be seen eight or ten feet in height, crowned with fifty blossoms.

"The reason why hens do not lay eggs in the winter is because the earth is covered with snow that they can find no gravel, or other calcareous matter to form the shells. If the bones of meat or poultry, be pounded, and given to them, either mixed with their food, or by itself, they will eat it greedily, and will lay eggs as well as in warm weather. When hens are fed with oats, they lay better than when fed on any other grain."

(From the New York Farmer.)

FIBROUS PLANTS.

Consulate C. S. A. Campeche, Jan. 14, 1833.

Dear Sir,—I trust that my various communications from Sisal and this port have reached you, although they were forwarded by indirect conveyance. Yesterday the first vessel direct from the United States, (the merchant schooner *Josefa*,) was announced, and this morning I received the newspapers which contained an account of the horrible events in South Carolina—horrible to an American resident of this theatre of civil war, when anticipating the possibility of similar anarchy in his own blessed country. Let every citizen of the United States who is discontented on account of the errors or abuse of his own state or national government—let him but pass one month in any of the misalled republics of Spanish America, and he will return with an increased admiration of our happy institutions. Cannot South Carolina borrow from Mexico any fruit but its bloody anarchy? She has transplanted from the Old Continent the rice and the cotton which gave prosperity and peace to her inhabitants; and she can introduce from this adjoining section of the New World the Cassave and Squisil, or the bread and cloth materials of analogous climates, which will restore their wealth and tranquillity.

By my statement of the experiment made on the sandy shore of Sisal with the cultivated Sacqui, you have seen that the Agave Sisalana is adapted to the most sterile soils and most exposed situations, and yields a much greater reward to the cultivator than any object of agriculture now existing in the United States. I am happy to state further, that on the almost naked rocks in the vicinity of this city, the cultivated Yasqui, which I caused to be planted about three years since, is now furnishing a second crop of its smooth edged leaves, from which is extracted the "greenish henequen."

I have the still greater satisfaction to add, that the young plants, of which hundreds are born in the centre stalk of the parent, 25 to 30 feet high, which I had placed in a bed during the spring of 1830, are now transplanted into a lot where they appear to rival in vigor the shoots which proceed directly from the roots of the Agave, which were the only ones heretofore used by the natives to form other fields.

The interest which I have manifested regarding these fibrous plants has caused the formation of a company to promote their cultivation—a new epoch in the history of Yucatan, which nothing but jealousy could have effected, and at which I rejoice, notwithstanding the motive which has stimulated these people to this extraordinary exertion. From their "project" I extract what follows: 1st, That in the third year from the time of planting the shoots, each Agave will yield in two cuttings annually at least four pounds of Sisal hemp; 2d, That every two years ten shoots or young Agaves may, or must be, extracted from the space around each mature plant; 3d, That in the third year and every year afterwards, 36,000 plants will yield 1,440 quintals, which at \$6 the quintal equals \$8,640.

Yours, respectfully, H. PERRINE.

(From the New England Farmer.)

PATENT DOMESTIC SILK SPINNER AND TWISTER.

Scituate, 3d Month, 7, 1833.

With confidence I introduce this machine to the public which I have learned from experience to be the best of any yet in use; as I have tried various ways for reeling and spinning silk, but found nothing but what required too much labor and loss to be profitable until I made this machine. This can be used to draw the thread and twist at the same time, cocoons enough to make the thread of any size required, and make it as much or as little as is wanted for weaving, knitting and double and twist the sewing silk in the neatest

manner; all with one operation by twisting it wet from the cocoon into a finished thread, smoother, stronger, and more even, uniting it in its natural gum, better than it can be after it is dried. Silk can be spun on this machine from the cocoons into a thread with less expense or labor than linen, cotton or woolen yarn, and its steady drawing does not break the fibres, as was experienced on other reels.

There is another advantage in using this machine. There is often a loss and perplexity from the silk's tangling, breaking and separating before it is twisted, but with this we may have it all saved and good with a little care in managing the cocoons.

I have had a piece of silk handkerchief spun, and woven in a common loom—reed and harness which obtained a premium at Bridgewater agricultural exhibition. It wove as strong as any other cloth.

Any person, who purchases a machine may learn to spin in two days, and shall have such instructions as are necessary to do it in the best manner gratis by coming to my house, or they may with a few days' trial, by following the directions, learn themselves.

Printed directions shall be furnished to the purchasers of each machine, describing the exact process from the cocoons to warp and filling for cloth or finishing sewing silk. I have had completed on this machine from the cocoons fifteen skeins of well wrought sewing silk in ninety minutes.

ADAM BROOKS.

For farther information relative to this machine, inquire at the Agricultural Warehouse, No. 52 North Market street, Boston.

RURAL ECONOMY.

(From the Genesee Farmer.)

ON THE DIFFERENT BREEDS OF CATTLE.

In the second volume of the Genesee Farmer, a letter is published from the Hon. J. H. Powell on improved cattle, in which he takes much pains to lessen the value of the *Devons*, and exalts the *Short-horn Durhams*. From the known character of the writer, I cannot suppose him capable of being influenced by prejudice or interest, although he was not the owner of *Devons*, but an extensive rearer and vender of the *Durhams*. Yet I am inclined to believe he was not very well acquainted with many valuable properties of the former, and did not realize the great inconveniences attending the latter. In England, where they have abundance of succulent food for winter, and their luxuriant pastures are seldom parched by drought in summer, the *Durhams* answer very well, as the extravagant price of beef in that country will compensate for almost any amount of labor; but, even then, the poorest pastures and the coarsest forage are fed by the smaller cattle. But here, the inconvenience arising from the summer's drought, which so often destroys our pastures; the scarcity of succulent food in winter; the unfitness of the oxen for labor; the great difficulty which the cows experience in calving—together with the low price of our beef, which will not compensate us for extraordinary care,—will, I think, be found reasons sufficient for excluding the *Durhams* from general use.

Now the *Devons* are admirably adapted to the circumstances and wants of western New York. They are fine boned, fat, quick, prove well, are very hardy, and keep easily. The oxen are active, vigorous and docile, well calculated for labor, not being surpassed by any, (not even the New England oxen,) although Mr. Powell thinks them unfit for any thing but light work. They will weigh when fatted from ten to fifteen hundred weight, and the cows from six to eight hundred weight, and from a given quantity of food, they will yield as much beef as the *Durhams*. The cows have no difficulty in calving, are excellent for dairy, giving very rich milk, which

yields a great quantity of butter and cheese, and are not surpassed by the *Durhams* in proportion to the food they consume. The bulls are fine boned, slim horns, clean limbs, and exhibit what is called in horses much blood. They are generally less than the oxen, and when compared with the *Durham* bulls, appear small; but the value of a sire depends upon the goodness of his stock. The color of the full blooded *Devons* is invariably a dark red or bright mahogany, without any white, excepting the brush of the tail, (which does not take that color until they are about a year old, but never fails of being all white at two years old,) or sometimes a little white on the belly.

The celebrated Mr. Coke, of Norfolk, England, had as good an opportunity of being acquainted with the *Devons* as Mr. Powell, and he pronounced them second to none in England, and such is the opinion of the best judges there; if so, they must be much preferable for this country. The following extract is from a valuable little work, entitled "The Experienced Butcher," (and has been republished in the first volume of this State's Agricultural Memoirs, page 284.) "By all judges of cattle, the *Devonshire* breed is confessed to be one of the most beautiful, and at the same time, one of the most valuable which our island (England) produces. They are of large size, and of a red color; the color of the cow varies from a light red to a dark mahogany. They are thin skinned, and silky in the handle. The general height of the bulls is from twelve to fourteen hands, the cows from eleven to twelve, and the oxen from fourteen to fifteen hands high. The *Devon* cattle arrive at maturity sooner than most other breeds. The full grown animals are so valuable that few of the calves are killed. For usefulness in agricultural labor, the oxen are held in the highest estimation; they are well fitted for draught both as to hardness and activity. Worked oxen of this breed attain a larger size than those which are not worked. In excellency of beef, the *Devon* oxen can scarcely be exceeded; and it is a remarkable circumstance, that they will bear driving to London sometimes without the smallest waste, from a distance of more than a hundred miles. The skin is reckoned among the thinner classes, but it improves much in tanning." The celebrated cattle of *Devonshire* are thus described in the *Annals of Agriculture*, No. 172, by Lord Somerville, a native and resident of the county in which these cattle are bred. His lordship first observes, that "to describe the breed not as they might be in imaginary individuals, but as they really are to be found, it may in general be observed, speaking of this as of all other breeds, that conclusions must not be drawn from the size and shape of the bulls, but from the general quality of their stock, certain it is that, individually, handsomer bulls are often to be found in other breeds; and it is certain, that this race, of which the whole produce is brought to view, stands the confessed favorite, or among the very first at Smithfield, where prejudice cannot find the way; and in forming an estimate of merit or demerit, the annual produce is to be the object attended to. This, in oxen, which for superiority of grain, activity in labor, are beyond all competition; and what in horses is termed blood, will be found a right criterion to judge of the bulls which got them." I might add many more proofs of the high estimation in which the *Devons* are held by good judges, but I fear this is already too long.

Yours,

F.

IMPROVEMENT IN CANDLES.—I steep the common wick in lime water, in which I have dissolved a considerable quantity of nitre or saltpetre. By this means I secure a purer flame and a superior light; a more perfect combustion is insured; snuffing is rendered nearly as superfluous as in wax candles, and the candles thus treated do not "run." The wicks must be thoroughly dry before the tallow is put to them.—*Farmer's Reporter*.

(From the Northampton Courier.)

SAGACITY OF BEES.

The instinctive sagacity of the honey bee every farmer has had occasion to notice. A curious instance of contrivance of means and success of ultimate ends, between two swarms was seen in this town last fall. A farmer, while crossing an open lot near the centre of the town, noticed a continued line of bees passing through the air, from one farm house to another. He followed the advancing line and came to its termination, where he found a hive which had been assailed by two foreign swarms, the one he had followed and another diverging off in nearly an opposite direction. By some instinctive understanding between the two swarms, they had united their strength and simultaneously attacked the hive; the struggle was then over and the dead and dying bees belonging to it lay scattered around the hive. The honey had been taken out by the conquerors, who were then carrying it to their own hives, something like fifty pounds having been removed in less than twenty-four hours. It was plain to discover, upon inspection, that a coalition had been formed between the two swarms, to attack and destroy the other, and afterwards to appropriate the honey to their own use. All this was done, but how the understanding was effected or the stipulations drawn up, we leave for the naturalists and curious to decipher.

(From the Genesee Farmer.)

BEE MOTH.

Mr. Editor—There have been several writers in the Farmer, who appear to have had considerable experience in raising bees. I would therefore make the following suggestions, hoping to elicit from some of them information respecting the natural history of the bee moth.

This destructive insect, when it has attained maturity, winds itself up in its web, and passes into the chrysalis state in the corners and upper part of the hive, or among the broken fragments of the comb. The miller must therefore be hatched in the hive, and the question arises, whether it does not immediately deposit its eggs, and prepare for a new progeny before it leaves the hive.

The miller of the silk worm, it is said, deposits its eggs in a few hours after it passes into its winged form, and such is believed to be the fact respecting most of the butterfly kind.

Now if this be a fact respecting the bee miller, I would ask, what can be done to save a hive once infested with the worm, except to destroy the hive, and to substitute another in its place? This I once knew practiced with success. The owner took the infested hive from the stand, substituted another in its place; then with his axe split open the hive containing the bees—took a few pieces of pure comb, and put them into the new hive, to which the bees resorted, took up their abode, and worked well. This was done early in the spring.

A.

(From the Kennebec Farmer.)

FATTENING BEEF.

Monmouth, Feb. 15, 1833.

Mr. Holmes:—I wish to communicate a few observations through the columns of your useful paper, in regard to fattening beef. Much of the beef made in this vicinity, is from cows which, through age, have become unfit for the dairy, and from oxen which are worn out with hard labor. It is customary to milk the cows until August or September, and as soon as they can be dried of their milk, begin to feed them, first with green corn stalks, small corn, potatoes and meal; and the value of the feed given them is generally much more than the value of the beef when slaughtered. The oxen intended for beef are generally worked in the spring as long as they are able to

drag the plough, because it is the last spring's work which they will do, for the owner intends to fatten them.

Now all this appears to me wrong. If those who have old cows which they intend to fatten, would dry them of their milk before they go to the pasture in the spring, and let them have a good pasture and plenty of salt, they will find that they will have much better beef than that which is made from vegetables in the fall, and much cheaper; and a cow thus fattened will have double the quantity of tallow, of those which are milked through the summer. The old and worn out oxen intended for beef, should be well kept through the winter and spring, and corn or meal freely given them, so that they may be in good case when they go to the pasture; one bushel of corn or meal given them in the spring is worth two in the fall. Let them have a good pasture and bleed them once a month or oftener, take but a small quantity of blood at a time. In this way the farmer will find he is amply compensated for the loss of milk from his old cow and for the labor of his worn out oxen.

A FARMER.

MISCELLANEOUS.

(From the New York Commercial Advertiser.)

SAP OF BIRCH TREES—A NEW DRINK.

[Justice to the author of the following communication, requires us to say that it was written off hand, immediately after the appearance of the article in the American, to which it is a reply.]

I saw last evening in the American the following:—
A NEW DRINK.—A correspondent sends us the following extract of a letter.

“By the way, do the people ‘down east’ know that an excellent drink can be made of the sap of birch trees? You may, if you please, communicate it to some newspaper. It is made like wine.”

The next best thing to telling that sap of birch trees makes an excellent drink, is to let us know the process of making it—though, to be sure, they are ‘cute enough ‘down east’ to find any thing out.

Not being acquainted with the editor of that paper, I have sent an answer to the inquiries then made, to you.

The very mention of the beverage is reviving. The birch tree from which the sap is taken for this purpose is the black birch, but yellow or white birch will answer the purpose. The birch of either species abounds more in sap than any other tree of the American forests. An hundred gallons of sap may be taken from a good sized tree in twenty-four hours.* Sixteen gallons of this sap contain about a pound of sugar. It contains a large quantity of fixed air, and is a delightful drink as it runs pure from the tree, and it may be used as freely as the Saratoga waters with safety. The drink is highly exhilarating. Beer may be made in various ways from this sap, but the best I ever drank was made in the following manner:

The trees were tapped in March, as the snow was wasting away, and tubs placed under them to catch the liquor. The crochets were fixed, the lug-pole extended, and the large kettle swung—the sap was put into them, and the fire kindled, and the sap was boiled down to about one-half of the natural quantity—

* “A man much employed in making maple sugar found that for twenty days together, one of the maple trees which he tended, discharged seven gallons and an half each day. A large birch which was tapped in the spring ran at the rate of five gallons an hour when first tapped; and during the season of the running of the sap, it discharged sixty barrels in one spring. The consequence of this waste of the juice was the death of the tree, the ensuing summer.”—*Vide The Natural and Civil History of Vermont by Samuel Williams, L. L. D. and printed at Walpole, by Isaiah Thomas & Co.—1794, p. 75.*

an half pint of the essence of the spruce, an handful of chickenberry leaves, with a small quantity of sassafras or sasaparilla is allotted to a barrel; and if you wish it to be super-excellent, put in as you turn it into the cask, about two quarts of maple syrup to thirty gallons. A few days after the casks are put into the cellar, give them a slight vent while it is in a gentle ferment. The casks should be in a cool place, that the fermentation should be slowly carried on; when this is over, bung it up tight, and in May it will be in the highest perfection.

No drink ever used is more delightful to the taste, or more healthy. It purifies the blood—sits well upon the stomach—and has no intoxicating effect. Had Bacchus known how to make birch beer, he would have thrown down his wine cup and adhered to the beer barrel. The writer of these rules for brewing the eastern birch beer, has tasted of the vintages of many nations;—has drunk from the leathern bottle of Shiraz, “the flagon of Rhenish,” the black glass containing Mountain Malaga,—the clear, inspiring looking taper necked bottles of Champagne; but would forego them all for the pure, well made, well kept cask of birch beer. It is remarkable for clearing the head—and for warming the heart. The New Hampshire troops had been swigging at it when they heard of the Lexington fight, and had a few barrels left when they went on to Bunker Hill—they drank but little else during the whole revolutionary conflict—and what people ever were braver?

Stark drank his tankard of beer until he was turned of ninety, and old Samuel Welsh, of Bow, refreshed the writer with a mug of fine birch beer in a warm day,—drinking freely of it himself, then in his hundred and twelfth year. Is it not conducive to long life? It must be confessed that some of the rising generation in that region, although they loved it dearly, thought it was not so fashionable as brandy; and did not think of offering it to a visitor; but it is to be hoped that this modesty has become quite extinct—and that in some future day the excellence of the birch will be sung with the virtues of the vine; and that the genius of Temperance will adopt the birch tree as an emblem of his complete triumph over all the fiery spirits of the distillery. A YANKEE.

(From the Genesee Farmer.)

SPURRED RYE.

You caution your readers against the use of this article. It is generally believed, I may say *known*, to be poisonous. I well recollect that in the seasons of 1815 and 16, most of the rye crops in New-England were much infested with it, and during these years much mortal sickness prevailed. In many instances the spurred rye was alleged as the cause. My father at that time owned a country grist mill, and had for many years a stout six footer of an overgrown miller to tend it. In the various grists which were brought to the mill for grinding was considerable of this spurred rye, which was easily known by its large black and distorted kernels. The question as to its poisonous qualities was often discussed by the farmers who came to the mill, and the miller who, as was usual with him on any subject where the least matter of science was connected, took the negative side of the question; and by way of proof positive, always made a point of picking out a handful of the ergot from the grist before him, as he sat tending the hopper, and eating it in presence of his combatant.

This I have seen him do oftentimes, say a large table spoonful at a time. He was never injured in the least by it, and is living yet as hale a man as any in the country. I do not mention this fact to confute the opinion that the ergot is poison, for I suppose it to have been reduced to such positive scientific examination as to settle this point, but to note a prominent exception to its general supposed application.

ULMUS.

Prices Current in New York, April 6.

Best wax, yellow, 18 a 20. Cotton, New Orleans, 10½ a 13½; Upland, 10 a 12; Alabama, 10 a 13. Cotton Bagging, Hemp, yd. 13 a 24; Flax, 13 a 14. Flax, American, 7 a 8. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.62 a 5.75; Canal, 6.12 a 6.37; Balt. How'd st. 5.75 a 5.87; Rld city mills, 6.87 a 7.00; country, 5.62 a 5.69; Alexandria, 5.62 a 5.75; Fredricksburg, 5.62 a 5.69; Petersburg, 5.62 a 5.69; Rye flour, 3.75 a 4.12; Indian meal, per bbl. 3.75 a 4.00; per hhd. 16.50 a 17.00. Grain, Wheat, North, 1.12 a 1.16; Vir. 1.20 a 1.22; Rye, North, .83 a .85; Corn, Yel. North, .68 a .71; Barley, .60 a .62; Oats, South and North, .45 a .46; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.50 a 10.00; Provisions, Beef, mess, 8.25 a 8.75; prime, 5.25 a 5.75; cargo, — a —; Pork, mess, bbl. 13.75 a 15.00, prime, 10.50 a 10.75; Lard, 7½ a .9.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED. Also MAMMOUTH PUMPKIN SEED. EARLIEST FRENCH CABBAGE do. EARLY FRENCH, or PARIS WHITE ONION do. ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

L. I. HITCHCOCK.

BUFFALO BERRY TREE OR SHEPHERDIA OF THE ROCKY MOUNTAINS.

Just received, a fresh supply of these truly splendid trees, which, when in bearing, are literally loaded with delicious red berries, resembling the Antwerp Currant, and set as thickly on every twig as kernels of corn on the ear. Price \$1 each.

Address, L. I. HITCHCOCK.

FINE MALTESE JACK FOR SALE.

The Subscriber has for sale (on commission) a fine Jack of the breed of the Knight of Malta and Royal Gift. He is six years old, a very powerful animal, a sure foal getter, very gentle and easily managed. Price \$200, delivered in Baltimore. The following are the dimensions of the animal furnished by the owner:

- 4 feet 2 inches in height, (12½ hands)
- 5 " 10 " round the body.
- 3 " 6 " round the neck.
- 1 " 4 " round above the knee.
- 1 " 0 " round the knee.

Apply to L. I. HITCHCOCK, American Farmer Office and Seed Store.

ORCHARD AND HERDS GRASS SEED

For sale at the American Farmer Office and Seed Store, by L. I. HITCHCOCK. Clean Orchard Grass Seed \$3 per bushel. A lot of this seed imperfectly cleared will be sold at \$2.50 per bushel. Herds, \$1 per bushel.

SILKWORM EGGS

For sale at the American Farmer Office and Seed Store, at \$1 per thousand. They can be sent safely by mail if ordered immediately, before the weather becomes warm.

L. I. HITCHCOCK.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at \$1 per bushel.

L. I. HITCHCOCK, American Farmer Office and Seed Store.

200,000 WHITE MULBERRY TREES.

The Subscriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the Morus Multicaulis, or Chinese White Mulberry.

ASA BUTLER, Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12, —61.

PUBLIC SALE OF DURHAM SHORTHORN-ED CATTLE AND HIGHLY IMPROVED SHEEP

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd. The highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEDGERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5, —81

IMPROVED DURHAM SHORTHORNS.

Several young BULLS got by Bolivar out of selected cows, — one nearly two years old, two yearlings, and two spring calves, — for sale at the Epsom Farm, seven miles and a half from Baltimore, on the York Turnpike road.

The bull Bolivar was bred by J. Whitaker, from the best stock in England, and imported by J. H. Powel, Esq.

April 12, —11*

FIELD AND GARDEN SEEDS, &c.

J. S. EASTMAN offers the following Seeds for sale, viz. CLOVER, TIMOTHY, MEADOW OAT GRASS, MILET, LUCERNE, COW PEAS, LARGE YELLOW PUMPKIN, and EARLY WHITE CORN.

Also a general assortment of GARDEN SEEDS, and WHITE ONION SETS.

Likewise in store, a general assortment of AGRICULTURAL IMPLEMENTS, embracing almost every article in the farming line, which he will sell low for cash or approved city acceptances.

He must decline opening any new accounts, except with those who will be liberal customers, and can give good references; and all such accounts he expects to be promptly settled once a year; and those who have accounts standing on his books over one year, are desired to settle the same. All Grass Seeds must be considered cash. Liberal discounts will be made on all implements purchased by merchants and others to sell again.

Feb. 15.

SINCLAIR AND MOORES NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices; — after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville,) double Allieas, Honeysuckles, Corcorus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alantus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets.

Feb. 22.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There has been very little variation in the market since our last. Flour remains strictly at former rates, the wagon price of Howard street continuing at \$5.37½, though a few purchases have been made at a trifle below that rate. A very fine cargo of white wheat was sold a few days since at \$1.25; and sales of other kinds of wheat, and other grain have been made within the range of our quotations.

TOBACCO.—Seconds, as in quality, 3 00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 321 hhd. Md.; 54 hhd. Ohio and 16 hhd. Vir.—total 391 hhd.

Flour.—best white wheat family, \$6.75 a 7.25; super Howard-street, 5.11 a 5.50; city mills, 5.37½ a 5.44; city mills extra 5.50 a —.—Corn Meal bbl. 3.25; —Grass, bested wheat, 1.12 a 1.18; white do. — a 1.25; —Corn, white, 69 a 70; yellow, 70 a 71; —Rye, 68 a 70 —OATS, 40 a 43 —BEANS, 75 a 80 —PEAS, 65 a 70 —CLOVER-SEED 8.00 a —TIMOTHY, — a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50.—Herd's, — a —Lucerne — a 37½ lb.—BARLEY,—Flaxseed 1.50 a 1.62—Cotton, Va. 10 a 12—Low, 12 a 13—Alab. 12 a 13—Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½—Wool, hhd. 1st p. 29 a —; in bbls. 29½ a 30 —Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 15; common, 16 a 18 Hemp, Russia, ton, \$200 a 210. Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37a 38; —Plaster Paris, per ton, 5.25 a —ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.50 a 6.25 —Oak wood, 3.00 a 3.25; Hickory, 4.50 a 5.00; Pine, 2.25.

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Direction of Letters.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "L. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, APRIL 19, 1833.

AMERICAN WINE.—We have received several specimens of wine, lately made by our enterprising countrymen, with requests that we would give our opinion of their qualities. They were all very pleasant to the palate, but obnoxious to the common objection of being sugared and brandied. We cannot recommend such liquors as wine, however delicious they may be as *cordials*. If those who make wine would put the sugar into the must, there would be no need of brandy, and then the wine *would* be wine.

We understand that the culture of the vine is extending in the vicinity of Richmond, and that the Catawba is the favorite variety. Mr. John Carter has a vineyard of considerable extent, and has made two hundred gallons of good wine, which he sold for two dollars per gallon. It was made from the Catawba grape. Mr. Wm. Anderson, of the same place, also has a vineyard of six or eight acres, which he is extending to double that size.

A WORTHY EXAMPLE, for all southern agriculturists, may be found in what follows from a young planter, who is at the same time a good sailor, and a polished scholar and gentleman.

Extract to Mr. Skinner, late editor of the American Farmer:

"Excuse me, when I entreat your kind offices in executing small commissions occasionally. The style of husbandry in this quarter is most wretched, and were not this one of the finest countries in the world, nobody could prosper under it. Old fashioned, inefficient tools are used. I have been assiduous in introducing on my plantations, the most approved implements, from all parts of the union, for my own benefit and as an example to my neighbors; but those things are seldom faithfully made, unless ordered by some friend on the spot. Baltimore, I am inclined to fix upon as my point of supply. I have become passionately fond of agriculture and shall devote myself to it exclusively: fortunately, it is in my power to pursue it as a means of pleasure, as well as of profit. Very soon, I discovered here, universal ignorance of the value of proper arrangement and almost entire neglect to keep up the fertility of the soil. For two years, I permitted the old mode to be followed, while I was collecting materials from observation, reading and experience for the foundation of a system. Last year, I struck into the new plan, and in the course of it, laid off myself, six hundred acres in the horizontal mode, on this place alone. I shall continue every year to mark in that manner, until the whole of my cleared land shall be worked, so as to obviate the washing of the soil. Where full crops of cotton are made, the picking of it out occupies nearly all that portion of the year, which might be otherwise employed in manuring and in making permanent improvements; it is plain, therefore, that on a cotton plantation every operation should refer to a single object. That there may be undivided attention; to a separate portion of this tract, I assign the raising of stock and provision exclusively; and at the mill place, where it extends to Savannah river, I intend to reside, when the buildings are completed, and establish an experimental farm. On this side, no other plough crop, than cotton shall be put in. None of the settlements are more than three and a half or four miles apart, so that I can easily visit them all every day. My manner of running fences and roads is, I believe, altogether new. I am a bold schemer in every thing, but I have advantage over most innovators in being the first to discover when I am wrong, and do not hesitate from false shame to alter my course, in being always eager to profit by the opinions of others, and in not aiming at eccentricity. Without greediness of disposition, involvement or inebriance, I may venture

to lanch out for discovery. It is certain, that unless a speedy change take place in its husbandry, this country must be utterly ruined, and I am not sensible of any feeling so strong, as the wish to contribute, unostentatiously, and however remotely, in effecting a beneficial change. All this, I write by way of apology for aspiring to your aid, without having any personal claim on your attention."

(From the New England Farmer.)

COCKROACHES.

Now is the proper season to clear houses of cockroaches, else, they will soon swarm, and then it will seem almost futile to attempt to do it effectually.

Take a deep plate or dish, and nearly fill the bottom part of it with molasses and water; set it near their haunts, with some chips from the shelf to the edge of the plate or dish, for a *rail-way free bridge*, for these nimble footed beauties to travel on to this sweet bath, and the next morning, a very goodly number of the *last generation* will be found up to their backs indolently revelling in this charming liquid—now, they are not dead but sleepeth, and if thrown out of doors, I will bet my "Cremona to a jewsharp" that the chance is equal for their reviving again and appearing in all their hideous deformity, "hobgoblin and all"—but another death will stop their swift race—viz. the fire; whatever number may be caught, scoop them out of the plate, and lodge them safely in the fire, and you make *good* their retreat, and nothing short of that will do it.

EXPERIENCE.

[We can give a better receipt for getting rid of cockroaches than the above; better, because cheaper and easier, as it costs but two cents and five minutes time. Catch three cockroaches—take care not to hurt them—wrap them in a piece of paper together with *two cents*, carry the package to the market, and slyly put them into a market cart, or wagon, or basket, or any thing else in which country produce is brought to town to sell. In the course of a few hours all the cockroaches will leave the house. This is called *selling* them, by those who practise it; but it would seem more like *buying* them away. If any one doubts the correctness or efficiency of the above receipt, we can give him the name of a very respectable gentleman and lady of this city who practised it themselves. The old gentleman assured us, that on going home to dinner one day, he met at the gate myriads of cockroaches marching out like an army; he mentioned the circumstance to his wife, who informed him that she had *sold* them in the manner above described. We have heard the story from both the gentleman and lady separately, and they most thoroughly believe that the cockroaches left the premises in consequence of the *sale* described. There were none on the premises for a long time afterwards. The respectability of the gentleman and lady, and the positive and serious manner in which they relate the story, absolutely preclude all expression of doubt on the subject, however much we may feel puzzled to account for the fact on principles of "why and because."—*Ed. Am. Farmer.*]

HORTICULTURAL SOCIETY.

A special meeting of this association was held on Saturday, the 13th inst. Amongst the plants exhibited by various members, we noticed the following:

A splendid bouquet of hyacinths, comprising eighteen sorts, all beautiful; some very rare and curious. We remarked several yellow ones, and one of a salmon color tipped with green—Presented by B. I. Cohen, Esq. Vice President of the society, who sent also a fine *Azalea Indica* (the scarlet) in full bloom, and a very tall specimen of *Albica Altissima* with a flower stem of several feet in height. A leaf from the same plant, the proprietor informed us, once measured seven feet in length.

A beautiful species of *Ornithogalum*, supposed *Arabicum*, a very handsome bulbous rooted plant;

flower stem about two feet high, bearing at the summit a corymb of about a dozen blossoms, pure white, with the exception of a small green spot at the tip of each division. Each flower is about an inch and a half in diameter, cup shaped; the *corolla* is very dark, presenting the appearance of a black spot, in the centre of the white flower, and rendering very conspicuous the six stamens which are arranged regularly around it.—Presented by Mr. Kurtz, who also exhibited flowers of *Cydonia Japonica*, and of *Fritillaria Meleagris*, or chess board Fritillary. The flower of this is bell-shaped, color without a greenish red, the inner surface marked with red and white squares in the same manner as a chess board. Also a new *Azalea*, imported from Canton some years ago, with lilac colored flowers.

A large and beautiful specimen of *Jacacia Armata*, five feet high, and covered with a profusion of flowers. *Ulicium floridanum*, in flower; a fine plant. *Valtheimia viridifolia*, a handsome plant, with a flower stem a foot high, bearing a large and compact cluster of long, tubular, pendulous flowers, of a flesh color, fading to white at the extremities; leaves large and luxuriant, of rich green, whence the specific name. Two varieties of *Primula auricula*, crimson and purple. Ninety one varieties of *Primula polyanthus*, really a pretty collection of every combination of color; all raised from seeds, and flowering for the first time this season. *Reseda alba*, a species which produces more beautiful flowers, but does not possess the delicious odor for which its well known congener, *Reseda odorata*, or nignonne, is so deservedly esteemed. The above were presented by Mr. Jno. Feast.

Specimens of *Tritonia crocata*, (formerly *Ixia*), and two new varieties obtained from seeds of the same by Zebulon Waters, Esq.—But undoubtedly the finest plant exhibited on this occasion was a *Cereus flagelliformis*, from the green house of the same gentleman. It was a well grown specimen, having at least fifty branches or stems in which several members counted fifty flowers or flower buds. The flowers are from two to three inches in length, of a most delicate rose color of different degrees of depth and richness, sometimes intermingled with a delicate tint of purple. They form a striking contrast with the scourge-shaped stems bristled with small spines, which same spines, though they present a very repulsive appearance at first, on a closer acquaintance prove to be very "insinuating." It is impossible to give any description that will convey a correct idea of this beautiful and singular production.

We must not forget to mention the *Hortensia rosea*, a handsome variety; *Ranunculus ficaria*, double; *Statice armeria*, or thrift, (a very desirable thing, by the way,) and a specimen of *Calampelos* or *Eccremocarpus caber*, a handsome twining green house shrub; all presented by Mr. J. Feast.

The room in which the society meets, in the Athenaeum, is large enough to accommodate a good many more members than we have yet seen at any meeting of the society. Why do not our fellow citizens come forward, and hand in their names to be enrolled in the list of members of an association, which requires but a general co-operation to be of immense public benefit? We hope the citizens of Baltimore will not suffer the efforts of the association to be paralyzed for want of that co-operation on their part.

D***.

RADISHES.—Most of our garden grounds are too rich for the radish; and but few gardens are found that do not contain more or less of the *wire worm*.—Hence we are induced to make experiments until we have raised them at least semi-transparent and as brittle as glass. Our method is, merely to mix two parts of sand with one part of common garden earth, and add a small quantity of stable manure. Or earth of a clayey nature is preferable to the garden earth. Since adopting the above method we have not failed in a single instance of raising an abundance of smooth, clear, and fine flavored radishes.—*Hing. Gazette.*

AGRICULTURE.

(From Proceedings of the N. Y. State Agricul. Society.)

ON THE CULTURE OF INDIAN CORN.

COMMUNICATION FROM JESSE BUEL.

There is no crop more beneficial to the American farmer than Indian corn. An eminent agriculturist, the late John Taylor of Virginia, called it the "meal, meadow, and manure," of the farm. It is convertible into human food in more forms than any other grain; its value in fattening domestic animals is not exceeded by any product of the farm; and no crop returns more to the soil than this does in the form of manure. There are two important requisites, however, to its profitable cultivation. The first is, that the soil be adapted to its growth; and the second, that the crop be well fed and well tended; for food and attention are as important to the plant as to the animal. Ordinarily speaking, it costs less to take care of a good crop of corn, on proper corn land, than it does of a bad crop on land not adapted to its culture. The first is light and dry. The latter stiff, wet or grassy. I put the average expense of cultivating and securing an acre, at \$15,* including a fair rent, though it ordinarily exceeds this sum. The farmer, therefore, who obtains thirty bushels from the acre, estimating the grain at 50 cents per bushel, gets a fair compensation for his labor, and the use of his land. Whatever the product falls short of this is an absolute loss; and whatever it may exceed it is net gain. Thus the man who gets but twenty bushels from the acre, loses upon this estimate, \$20 worth of his labor, on four acres. He who raises 80 bushels an acre, on the other hand, realizes a net profit of \$100 from four acres—making a difference in the profits of the two farmers, in the management of four acres of corn, of *one hundred and twenty dollars!* These data are sufficiently accurate to show the importance of the two requisites I have suggested, and the value of a little calculation in the business of farming. The habit of noting down the expense, as well as the product of a crop, and thus ascertaining the relative profit and loss, is highly advantageous to the practical farmer, and one which cannot be too strenuously inculcated. It will perhaps be said, that I ought to add the value of the manure which is employed in the large crop; but I reply, that I offset this against the increased forage which this crop furnishes. Besides, by applying the manure in the unfermented state in which it is generally found in the spring, it will be as beneficial to the succeeding crops, as though it had lain and fermented in the yard, and been applied in the usual way in the autumn †

* Estimated expense of cultivating an acre of Indian corn.

One ploughing, (suppose a clover lay,)	\$2 00
Harrowing and planting,	2 00
Two hoeings, 4 days and horse team,	3 75
Harvesting, 2 days,	1 50
Cutting and harvesting stalks,	1 50
Rent,	5 00

—\$15 75

† Stable and yard manures lose 50 per cent. by the fermentation they undergo in the yard during the summer. This loss consists of the gases which are evolved in the process of rotting, and of the fluids which sink into the earth, or are carried off by the rains. Plants receive their food either in a gaseous or liquid form. If manure rots in the soil, neither these gases or fluids are lost: the earth retains, and the roots of the plants imbibe them. Yet recent manures are not proper to be applied to small grains. They cause too rank a growth of straw, and are apt to induce rust and mildew. Thus a crop of corn, potatoes, or ruta baga may be fed and fattened, if I may use the expression, upon the dung which is destined to nourish the wheat crop, without deteriorating its value for the latter purpose, if it is applied to the corn, &c. before it has fermented.

The soils adapted to the culture of Indian corn, are such as are permeable to heat, air, and the roots of the plant, and embrace those denominated sandy, gravelly and loamy. Corn will not succeed well on grounds that are stiff, hard or wet. The roots grow to as great a length as the stalks, and the soil must be permeable to permit their free extension.

The manures used are generally yard and stable dung, and plaster of paris, (sulphate of lime.) The first ought to be abundant; as upon the fertility which it induces, depends the profit of the crop. Long or unfermented manure is to be preferred. It decomposes as the wants of the plant require it; while its mechanical operation, in rendering the soil light and porous, is beneficial to the crop. It should be equally spread over the whole surface, before it is ploughed under. It then continues to afford fresh pasture to the roots till the corn has matured, and is in its place to benefit the succeeding crop. If put into the hills, the roots soon extend beyond its influence, it does not so readily decompose, and the subsequent crop is prejudiced from its partial distribution in the soil. In a rotation of four or five years, in which this crop receives the manure, twenty-five or thirty ordinary loads may be applied to one acre with greater profit, than to two or three acres. Every addition tells in the product; and there is scarcely any danger of manuring too high for this favorite crop. Gypsum is applied broadcast before the last ploughing or harrowing, or strewed on the hills after hoeing. I pursue the first method, at the rate of a bushel to the acre. ‡

The best preparation for a corn crop is a clover or other grass lay, or lea, well covered with a long manure, recently spread, neatly ploughed, and harrowed lengthwise of the furrow. A roller may precede the harrow with advantage. The time of performing these operations depends upon the texture of the soil, and the quality of the sod. If the first is inclining to clay, or the latter tough or of long continuance, the ploughing may be performed the preceding autumn; but where sand or gravel greatly preponderate, or the sod is light and tender, it is best performed in the spring, and as near to the planting as convenient. The harrow at least should immediately precede planting. All seeds do best when put into the fresh stirred mold. Stiff lands are ameliorated and broken down by fall ploughing; but light lands are rather prejudiced by it. When corn is preceded by a filled crop, the ground should be furrowed, and the seed deposited in the bottoms of the furrows. Where there is a sod, the rows should be superficially marked, and the seed planted upon the surface.

* We are on the northern border of the maize zone, and should make up for defect in climate by selecting soils into which the heat readily penetrates. Air, besides conveying warmth in summer, imparts fertility by the vegetable food which is always suspended in it in the form of gases. Dews are also charged with these properties of vegetable nutriment, and when the soil is porous, they settle down as in a sponge, and impart fertility to the roots (the true mouths) of plants.

‡ I adopt the opinion of Davy, as the *modus operandi* of plaster of paris, that it forms a necessary constituent of plants which it benefits, and is of no direct benefit to plants which do not afford it on analysis. Among the first are the clovers, corn, potatoes, and generally such plants as have broad or succulent leaves, while the latter embrace calumiferous grains and grasses, as wheat, rye, timothy, &c. Critical observation for years has confirmed me in this conclusion. Gypsum must be rendered soluble before it can be taken up by the mouths of plants, and it requires 650 parts of water to dissolve one of this mineral. I infer from these facts, that by burying it in the soil, it more readily dissolves, and is more accessible to the mouths of plants, than if spread upon the surface of the ground. I am induced, from these views of the subject, to sow plaster, on grass grounds, in March, and upon corn and potato grounds before the last ploughing for these crops. The latter was recommended and practised by the distinguished agriculturists, the late Mr. Taylor of Virginia, and Judge Peters, of Pennsylvania.

Where the field is flat, or the sub-soil retentive of moisture, the land should be laid in ridges, that the excess of water which falls may pass off in the furrows.

The time of planting must vary in different districts and in different seasons. The ground should be sufficiently warmed by vernal heat to cause a speedy germination. Natural vegetation affords the best guide. My rule has been to plant when the apple is bursting its blossom buds, which has generally been between the 12th and 20th of May.

Preparation of the seed.—The enemies to be combated are the wire worm, brown grub, birds and squirrels. Of these the first and two last prey upon the kernels, and against these tar offers a complete protection. I soak my seed 12 to 20 hours in hot water, in which is dissolved a few ounces of crude saltpetre, and then add (say to 8 quarts of seed) half a pint of tar, previously warmed and diluted with a quart of warm water. The mass is well stirred, the corn taken out and as much plaster added as will adhere to the grain. This impregnates and partially coats the seed with the tar. The experience of years will warrant me in confidently recommending this as a protection for the seed.

The manner of planting is ordinarily in hills, from two and a half to six feet apart, according to the variety of corn, the strength of the soil, and the fancy of the cultivator. The usual distance in my neighborhood is three feet. Some, however plant in drills of one, two and three rows, by which a greater crop is unquestionably obtained, though the expense of culture is somewhat increased.* The quantity of seed should be double, and may be quadruple† what is required to stand. It is well known that a great difference is manifest in the appearance of the plants.

* The following table exhibits the difference in product of various methods of planting, and serves also to explain the manner in which large crops of this grain have been obtained. I have assumed in the estimate, that each stock produces one ear of corn, and that the ears average one gill of shelled grain. This is estimating the product low; for while I am penning this (October) I find that my largest ears give two gills, and 100 fair ears half a bushel of shelled corn. The calculation is also predicated upon the supposition, that there is no deficiency in the number of stocks, a contingency pretty sure on my method of planting.

	Hills.	bush.	qts.
1. An acre in hills, 4 feet apart, each way, will produce	2722	42	16
2. The same, 3 by 3 feet,	4840	73	20
3. The same, 3 by 2½ feet,	5808	93	28
4. The same in drills, at 3 feet, plants 6 in. apart, in the drills,	29,040	113	14
5. The same in do. 2 rows in a drill, 6 in. apart, and the plants 9 in. and 3 feet 9 inches from centre of drills thus,	30,970	120	31
6. The same in do. 3 rows in a drill, as above, 3 ft. from centres of drills,	43,560	170	5

The fifth mode I have tried. The ground was highly manured, the crop twice cleaned, and the entire acre gathered and weighed accurately, the same day. The product in ears was 103 baskets, each 84 lbs. net, and 65 lbs. over. The last basket was shelled and measured, which showed a product on the acre of 118 bushels 10 quarts. I gathered at the rate of more than 100 bushels the acre, from four rods planted in the third method, last summer, the result ascertained in the most accurate manner. Corn shrinks about 20 per cent. after it is cribbed. The sixth mode is the one by which the Messrs. Pratts, of Madison county, obtained the prodigious crop of 150 bushels per acre. These gentlemen, I am told, are of opinion, that the product of an acre may be increased to 200 bushels.

‡ I am told the Messrs. Pratts, above alluded to, used seven bushels of seed to the acre, the plants being subsequently reduced to the requisite number.

Some appear feeble and sickly, which the best nursing will not render productive. The expense of seed, and the labor of pulling up all but three or four of the strongest plants in a hill, it is believed will be amply remunerated by the increased product. If the seed is covered, as it should be, with fine mold only, and not too deep, we may at least calculate upon every hill or drill having its requisite number of plants.

The after culture consists in keeping the soil loose and free from weeds, which is ordinarily accomplished by two dressings, and in thinning the plants, which latter may be done the first hoeing, or partially omitted till the last. The practice of ploughing among corn, and of making large hills, is justly getting into disrepute: for the plough bruises and cuts the roots of the plants, turns up the sod and manure to waste, and renders the crop more liable to suffer by drought. The first dressing should be performed as soon as the size of the plants will permit, and the best implement to precede the hoe is a corn harrow, adapted to the width of the rows, which every farmer can make. This will destroy most of the weeds and pulverise the soil. The second hoeing should be performed before or as soon as the tassels appear, and may be preceded by the corn harrow, a shallow furrow of the plough, or what is better than either, by the cultivator.* A slight earthing is beneficial, providing the earth is scraped from the surface, and the sod and manure not exposed. It will be found beneficial to run the harrow or cultivator a third, and even a fourth time, between the rows, to destroy weeds and loosen the surface, particularly if the season is dry.

In harvesting the crop, one of three modes is adopted, viz. 1. The corn is cut at the surface of the ground, when the grain has become glazed, or hard upon the outside, put immediately into stooks, and when sufficiently dried, the corn and stalks are separated, and both secured. 2. The tops are taken off when the corn has become glazed, and the grain permitted to remain till October or November upon the outs. Or, 3. Both corn and stalks are left standing till the grain has fully ripened, and the latter become dry, when both are secured. There are other modes, such as leaving the butts or entire stalks, in the field, after the grain is gathered; but these are so wasteful and slovenly as not to merit consideration. The stalks, blades, and tops of corn, if well secured are an excellent fodder for neat cattle. If cut, or cut and steamed, so that they can be readily nasticated, they are superior to hay. Besides, their fertilizing properties, as a manure, are greatly augmented by being fed out in the cattle yard, and imbibing the urine and liquids which always there abound, and which are lost to the farm, in ordinary yards, with-

*The cultivator is made in the form of a triangular harrow, with two bulls; or if intended to be graduated to different widths, a centre bull is added, to which the exterior ones are attached by hinges. Iron slats, fixed to the exterior bulls, pass through a mortice in the centre one, perforated with holes, through which an iron pin passes to hold them at the graduated width. The teeth may be in any approved form, or reasonable number. The cultivator I use has five teeth, two in each of the outward, and one upon the centre timber. The teeth have a stout shank, with a duck's foot termination, four inches broad, somewhat cylindrical, rounded at the point, and inclined forward in an angle of 30 or 40°. This implement is useful for other purposes; and may be used, like Beaton's, as a substitute for the plough, in preparing light soils for a crop. The handles are attached to the centre piece. The teeth have a shoulder, on the under side of the timber, and are fastened with screws and nuts above.

† Some entertain a mistaken notion, that it is prejudicial to stir the soil among corn in dry weather, and others that weeds serve to prevent the evaporation of moisture by a hot sun. The reverse of these opinions is true. The exhaustion of moisture by a plant is in the ratio of the surface of its leaves and stocks presented to the sun and air.

out an abundance of dry litter to take them up. By the first of these methods, the crop may be secured before the autumnal rains; the value of the fodder is increased, and the ground is cleared in time for a winter crop of wheat or rye. The second mode impairs the value of the forage, requires more labor, and does not increase the quantity, or improve the quality, of the grain. The third mode requires the same labor as the first, may improve the quality of the grain, but must inevitably deteriorate the quality of the fodder. The corn cannot be husked too promptly after it is gathered from the field. If permitted to heat, the value of the grain is seriously impaired.

Saving seed.—The fairest and soundest ears are either selected in the field, or at the time of husking, a few of the husks being left on, braided and preserved in an airy situation till wanted for use.

In making a choice of sorts, the object should be to obtain the varieties which ripen early, and afford the greatest crop. I think these two properties are best combined in a twelve rowed kind which I obtained from Vermont some years ago, and which I call Dutch corn, from the name of the gentleman from whom I received it. It is earlier than the common eight rowed yellow, or any other field variety I have seen; and at the same time gives the greatest product. I have invariably cut the crop in the first fourteen days of September, and once in the last week in August. The cob is large, but the grain is so compact upon it, that two bushels of sound ears have yielded five pecks of shelled grain, weighing 62 lbs. the bushel.

In securing the fodder, precaution must be used. The butts become wet by standing on the ground, and if placed in large stacks, or in the barn, the moisture which they contain often induces fermentation and moldiness. To avoid this I put them first in stacks so small, that the whole of the butts are exposed upon the outer surface; and when thoroughly dry they may be taken to the barn, or left to be moved as they are wanted to be fed out—merely regarding the propriety of removing a whole stack at the same time.

(From the Western Agriculturist.)

LIVE FENCES.

In England, the plant in most common use for making hedges, is the white thorn. They are propagated by sowing the haws in drills like peas, where they usually remain until they are taken up to be planted in the hedge. The white thorn is not a native of this country, but will grow here as rapidly as it does in England. The haws of this plant may be had at Liverpool or London in the months of November and December, preserved in sand in barrels. The cost is not more than two dollars a barrel, and three barrels would be sufficient to hedge a common sized farm. Many other plants are also used in that country, such as the holly, the larch, the alder, and the beech, which latter is found to answer remarkably well in cold, wet, clayey soils.

Experiments in different parts of the United States within the last thirty years, have established the fact, that we have a variety of plants well adapt-

ed to all the purposes of hedging. Among these may be enumerated several varieties of the American thorn, the cedar, the holly, the crab, the honey locust, the beech, the willow, the hemlock, and the black locust. Among the more valuable of these may be named the cedar, several varieties of thorn, the honey locust, the hemlock, and the crab, all of which may be propagated from the seed.

The mode of raising the "American" thorn, one of the varieties of the common haw thorn, as practised most successfully, by Mr. Thomas Mann, of the District of Columbia, is the following: The seed are to be carefully extricated from the berries, by moderate pounding with a wooden pestle, after which the stones are to be washed perfectly clean from the pumice, by rubbing them with the hand in water. They should then be placed in a deep box, loosely made, and perforated at the bottom with holes, to permit the water to escape. This box should then be covered with oak leaves or moss, and placed out of doors in some secure but bleak cold situation, and protected from mice and ground squirrels. No earth need be mixed with the seed, nor is it material how often the seed are frozen. On the approach of spring, the seed are to be inspected every two or three days, and so soon as they begin to feel slimy, it indicates that the shells of the stones are about to open. As early as the weather will permit, a bed of free, rich, deep, black loam, rather inclined to moisture than dryness, and situate rather at the bottom than the top of a height, is to be prepared. It should be carefully dug to the depth of twelve or fifteen inches. So soon as the small point of the rootlet of some of the seed becomes visible, the seed are to be sown, in beds about four feet wide, separated by alleys fifteen or eighteen inches in width. The seed ought to be rolled in plaster of paris at the time of sowing, and scattered about an inch apart,—half an inch of fine mold is sufficient for the covering. If the weather is favorable, the young plants will appear in a few days. The whole process may be summed up in a few words:—clear the stones well from the pumice of the berries, keep them damp through winter, and at the proper time in the spring, place them in beds well prepared.

For the purpose of raising a nursery of cedar plants, let the berries be gathered in November and December, and having rubbed off, as far as practicable, the resinous substance in which the seeds are enveloped, mix them with unslaked ashes, in which let them remain for two weeks; then plant them in drills after the manner of planting peas, and they will vegetate and come up the following spring. If well nursed, they will be ready for removal into a hedge in about two years. The trenches into which they are to be placed, should be prepared with light rich earth. The first of March is the proper time for planting them. When the plants have attained the height of three feet, the trimming should be commenced, and the best time for this operation is the middle of summer. A hedge of great beauty, strength and durability, may thus be formed in about seven years from the time of planting. It should be borne in mind that the more thoroughly the seeds are cleaned, and the earlier the plants are removed in the spring, the better. Col. John Taylor, of Virginia, the author of *Arator*, who has paid great attention to the cultivation of cedar hedges, says they should be transplanted in the three winter months, and in March. They should be taken up in such a manner, if possible, as not to remove the earth in immediate contact with the roots, and in this condition placed in their proper situation in the hedge. The smaller the cedars are when removed, the better. An annual trimming is indispensably necessary for the thickening of the hedge. The richer the ground, the better. The cedars should be hoed twice a year, until they attain the size at which they are to remain. The same writer adds, "The holly promises every thing as a shrub for live fences, but I have never tried it, nor do

ed to all the purposes of hedging. Among these may be enumerated several varieties of the American thorn, the cedar, the holly, the crab, the honey locust, the beech, the willow, the hemlock, and the black locust. Among the more valuable of these may be named the cedar, several varieties of thorn, the honey locust, the hemlock, and the crab, all of which may be propagated from the seed.

I know whether its seed will vegetate more kindly than those of the cedar. My hedge of cedar is the best I ever saw, and improves yearly."

The honey locust of our forest is easily propagated from the seed. The plants thrive remarkably well, and owing to the powerful thorns with which they are clothed, form, when cultivated into a hedge, an impassable barrier, even in a single row. It is less beautiful than the cedar or the holly, but for outside fences, designed to resist the depredations of the animals that are running at large, it will perhaps, be found that the honey locust hedge has advantage over either of the before mentioned plants. It grows in most abundance, upon, and indeed may be said to be a native of the rich lands. Hence the importance of rendering the ground rich in which a hedge of this plant is about to be placed. J. C. Short, Esq. of this country, has made a successful experiment with the honey locust, and is very favorably impressed with its value for making live fences. Its foliage is beautiful, folding the lobes of the leaves together every evening, like the clover and some other plants.

The common crab which abounds in our woods, is another plant well calculated for hedging. It possesses all the qualities to render it equal to the English thorn. In one particular, it has peculiar claims on the attention of farmers—the beauty and fragrance of its flowers. For these it is unsurpassed by any other tree or shrub to be found in our forest. It may be readily propagated from the seed in the manner that the common apple tree is raised. An English gentleman, now a resident of this country, who is making some valuable experiments in hedging, has a crab hedge, which he thinks equal in all, and superior in some respects to those made of the English thorn. Among other claims to superiority over either the English or American thorn, is that of its rapid growth. From the experiments made by this individual, it appears that the crab hedge will come to perfection in one-third less time than either the indigenous or foreign thorn.

The hemlock, in the opinion of Richard Peters, Esq. of Pennsylvania, is a plant of equal value with that of any other to be found in our country, for the formation of hedges. It retains its foliage through winter better than most of the resinous tribe. It grows more rapidly than the cedar, and can be raised with but little trouble, from the cones. It thrives well in the shade, and when in bloom, is the most beautiful of all its tribe. The limbs grow horizontally and longer than those of cedar. The *layers* will readily take root. The spring is the best season for transplanting them. The plant may be easily trimmed with the shears.

In low wet grounds, the willow makes a thrifty and substantial fence. The white mulberry will also form a good hedge, but bearing no thorns, and the leaves being attractive to cattle they are apt to prey upon it. Its introduction, however, whether for hedges or for ornament, about a farm, is becoming a matter of deep importance, in consequence of the leaves affording the most nutritious and valuable kind of food in the rearing of silkworms.

That hedges are cheaper and more durable than dead fences made of wood, is, we believe, the concurrent opinion of nearly all the writers and experimentalists, both of Great Britain and this country. Cobbett says, that in this country, a hedge with double rows of the English white thorn, nine hundred feet in length, can be made, that will cost, when five years old, including plants, planting, cultivation and clipping, but fifty-three dollars. There are hedges now standing in England that are from one hundred to three hundred years old. From these data, the farmer can make his own calculations between the cost and relative value of worm fences and live hedges for inclosing.

Another writer in the American Farmer, says, that a good hedge of the American thorn, when seven years old, will cost for every sixty perches, twenty-

four dollars and seventy-five cents. For a farm of one hundred acres, divided into ten fields, twenty-five hundred pannels of post and rail fence would be required, which at seventy-five cents a pannel, would amount to \$1875. The hedge fence for this same farm, with similar divisions, at the foregoing estimate, would cost \$1031, leaving a clear balance, in the original cost, of \$844 in favor of the live fence. At the end of one hundred years, the hedge, with a small annual expenditure of labor upon it, will be as good or better than it was at the end of the first seven years. The post and rail fence, in the course of one hundred years, would require at least six renewals. Surely no further illustrations upon this point need be made, to secure the early attention of the farmers of the west, to this important part of their agricultural labors. It is to be borne in mind, moreover, that hedges are not, like dead fences, liable to be blown down by the winds; nor can they, like the latter be readily overthrown by unruly animals. They are better safeguards around orchards, vineyards and gardens, to protect them against the depredations of men, than the common fences, and finally, they are ornamental in the highest degree to a farm, a matter that will not be overlooked by the husbandman of taste and intelligence.

Another consideration in favor of an early resort to live fences, arises from the fact, that in many parts of Kentucky and Ohio, the timber necessary for the construction of dead fences is becoming scarce. Such has been the excessive and wanton destruction of the forest trees in these states, that although it is less than half a century since the silence of the wilderness was first broken by the sound of the axe, it is a lamentable fact, that many farms are already without the timber necessary for another renewal of their fences. This is a growing evil in the land, and no alternative will shortly be left our farmers but the rearing of hedges. Whenever the experiment, with live fences, shall have been fairly made, we predict that the only regret of the agriculturist will be, that he had not sooner entered upon the system, and thus preserved, at least a part of the oaks and poplars and chestnuts that once, in towering magnificence, spread their verdant branches over his lands.

In conclusion, we propose to make a few observations upon the best modes of lessening the evils so loudly complained of by the western agriculturists, arising from their present system of inclosures.

The first and most important step is that of procuring the passage of a law prohibiting, absolutely, the running at large of horses, cattle, sheep, and more especially hogs. This is a measure that can work out no injury to the rich or the poor, but on the contrary will confer signal advantages upon all classes of the community. No time should be lost in circulating petitions, praying the legislature for the passage of such an act, and no candidate who will not pledge himself to advocate the passage of such a law, should hereafter receive the votes of a single husbandman, who is not willing to see his grains and his fruits, which have been nourished by the sweat of his brow, annually eat up or trampled down by hungry and unruly animals. Our legislators should be told, (for it is a lamentable fact that many who are annually elected, have not the intelligence to make the discovery themselves,) that protecting the farms of their constituents from the depredations of lawless hogs and cattle, is a matter of deeper importance, and better suited to their talents, than spending a session at the capital, tinkering constitutions, or electing presidents. The apathy of our farmers on this subject, is truly marvellous. They act and vote for representatives as if they themselves had nothing at stake. Instead of electing, as their legislators, experienced, intelligent and practical men, they suffer themselves, year after year, to be enojed of their votes by political demagogues, who have neither the inclination nor judgment for pursuing the interests of their constituents. We hesitate not in saying that a law of the

kind here proposed, will do more in preserving the peace of neighborhoods, and in lessening the evils growing out of the want of permanent and substantial fences, than any other measure that can be suggested.

In the second place, it is manifest that where stone abounds upon the surface of a farm, in such situations, that it need not be hauled more than three or four hundred yards, sound policy will dictate the construction of stone fences in preference to those of dead timber. The economy of this system of enclosure, however, will greatly depend upon the manner of constructing the wall and the facility of procuring the material. But it is perfectly obvious that stone fences can never be generally adopted throughout the country. In certain situations and under certain circumstances they will be found highly advantageous.

Lastly, it has been made apparent, we think, that live fences or hedges, combine more economy, security and permanency than any other description of inclosures that has yet been adopted. We do not propose to re-enter upon the examination of their superior advantages. Enough, it is believed, has been said to secure for them the early attention of the farmers of the West. From what has been advanced upon the rearing of hedges, it will be perceived that it requires six or seven years to bring one to perfection. This is about the period that a common worm fence will last, provided it have some annual repairs. Young hedges need some kind of protection for the first three or four years from the depredations of animals. The existing fences will answer very well for this purpose. If then those farmers who now have their grounds enclosed with dead timber, were forthwith to plant out beside their fences, hedges of thorn, locust, crab, or cedar, instead of an expensive and laborous renewal of the former at the end of seven years, they would have in their places what in England is emphatically called an "everlasting fence," most pleasantly ornamental to their farms, and presenting an almost impervious barrier both to men and animals. This once attained together with the passage of a law prohibiting the running at large of animals, and the "fretting leprosy" of the land will be eradicated. The main leak being stopped, the farmer's cup of bliss will be full.

HORTICULTURE.

(From the Genesee Farmer.)

EXPERIMENTS ON THE CULTURE OF SQUASHES AND MELONS.

Gratfield, 3 mo. 27, 1853.

About three years ago, having a surplus of stable manure in the garden, I had it formed into a narrow ridge, about two feet high, and then covered over to the depth of three or four inches with common soil, in the same manner as we bury turnips and potatoes. This was intended as a preparatory step towards converting it into compost; but afterwards finding no suitable spot in any other part of the garden for squashes, I concluded to let it remain undisturbed till autumn, and put in the seeds at proper distances, singly, along the top of the ridge. The plants were the most productive that I had seen in many years.

Last spring we carted yellow pit-sand from a depth of two or three feet, into the garden; and after mixing with it a liberal portion of the scrapings of the barnyard, it was made into a sharp ridge about two feet in height, for sweet potatoes. Not having sprouts enough to plant the whole, however, a part remained unoccupied. It so happened that a package of rare seeds, generously sent me by a distant horticulturist, and which had been detained on the way, arrived a month after the usual time for planting; and among these were two rare kinds of squashes. As this ridge was the only ground that I had unappropriated, I planted the latter seeds on its top. The growth was most remarkable, and I have never seen squashes on

the richest alluvial soils that equalled them in luxuriance.

Although in both these cases, the supply of manure was plentiful, yet I ascribe much of my success to the plants growing on a ridge from which the surplus water in rainy weather, could rapidly pass off. In a former paper,* I have spoken of the advantages of planting melons on ridges; and some time in the last summer, I saw an article written by my friend Richard M. Williams, who had anticipated me in this mode of culture. But whoever may have the honor of the first discovery, we who follow in a track so judiciously marked out, may have quite as much profit; and I recommend this method of raising melons and squashes to all who have to cultivate heavy lands. As his remarks have not yet appeared in the Genesee Farmer, I will take the liberty to make some extracts:

"About the year 1802, I had some grounds ridged for sweet potatoes; when about to plant, my foreman asked me for some watermelon seeds; I gave him about a gill, which he distributed among the planting hands, directing them to plant one seed once in about a rod, near the top of the ridge.

"These vines grew and flourished astonishingly, producing from four to six melons each, most of which were three feet long, and from six to nine inches in diameter, of very fine flavor, and sold readily at the Savannah market from 62½ to 75 cents each, so that I received about \$3.75 from each vine.

"The same season, I took unwearied pains to prepare about an acre of ground, which I directed to be planted on a level in the Yankee fashion. My foreman, old Tom, told me, "*him no do, massa, him all spoil*;" in fact I never scraped five dollars profit from the whole acre. The sun and rain spoiled the whole of them. My cow-yard contained about a quarter of an acre; I ridged about half of it, and planted it with watermelons; from this small patch I sold rising of seventy-five dollars worth of melons. The patches were all planted from the same seed, and the soil was clear sand."

It appears then that this method has been long practised by the negroes in Georgia. About fifteen years before the period alluded to, a near neighbor of my father's had the finest water melons that he had ever raised, owing to the following circumstances: A heap of dark gray sand from the river, had been left in the yard—a remnant not used by the masons; and into this, either by design or accident, some of the children had put the seeds. It does not appear, however, that any further advantage was taken of this unexpected and successful discovery. D. T.

(From the New England Farmer)

ASPARAGUS.

It has formerly been thought necessary to make a very laborious and expensive process of the cultivation of asparagus, but it has more recently been ascertained that the old modes of growing that valuable esculent may be dispensed with, and asparagus raised with about as much facility as potatoes. The Hon. John Welles thus describes his method, which we believe might be adopted, generally, to great advantage.

"A piece of ground was taken of a deep rich soil, after a common corn crop was taken off, the land was ploughed and manured in the usual course. Holes were then dug twelve to fourteen inches in depth, and about the same distance apart, and two or three shovels full of compost manure were mixed with a part of the earth. The roots of a year's growth were then inserted at about six inches in depth. This bed has flourished, and has been thought as productive as any whatever. I at the same time, with a view to a more full and fair course of experiments, took a piece of land in another place of opposite character, being of thin light soil, and adopted a like course and

the result has been equally favorable. The only difference to be noted, was that the latter was more early in coming forward from the nature of the soil.

"However rare it may be that there is any over cultivation or preparation of the soil for any vegetable production, it would seem here to be the case. The old forms appear to have been kept up, and to have discouraged a more general diffusion of this valuable plant."

"Dr. Deane, in his husbandry, has somewhat simplified the matter, but not sufficiently. His proposed method of placing the roots at six, eight, and nine inches apart is quite too near. The duration of ten or twelve years is quite a mistaken one: it lasts with us double that period."

Mr. Armstrong, in the second volume of the "*Memoirs of the New York Board of Agriculture*," says, It has been asserted, and with sufficient confidence, that a pickle of salt and water of the ordinary strength for preserving meat may be very usefully applied to asparagus beds in the spring. The effects ascribed to it are its stimulating power over the crop, and its tendency to destroy the seeds of weeds and insects lying near the surface. Experiments on this subject should be multiplied, and with pickles differing in strength and quality. In the last edition of Deane's New England Farmer, it is observed that "to a bed fifty feet by six, a bushel of salt may be applied with good effect before the plants start in the spring."

Asparagus is reputed to be a very healthy vegetable. Loudon says, in Paris it is much resorted to by the sedentary operative classes, when they are troubled with symptoms of gravel or stone. *Willrich's Domestic Encyclopedia* observes, "Asparagus is allowed to promote appetite; and affords a delicious article of nourishment to the invalid and valetudinary, who is not troubled with flatulency."

RURAL ECONOMY.

(From Proceedings of the N. Y. State Agricul. Society.)

SHEEP HUSBANDRY.

Hosick, Rensselaer Co. N. Y. Dec. 31, 1832.

The breeding of fine woolled sheep has become an important branch in agriculture and industry. Many writers have written very ably on the subject, and much useful and interesting information has been circulated. It might therefore seem presumptive in me, to say any thing more on the subject, had not circumstances given it a new view, and if this branch of agriculture, like every other, were not continually advancing to improvement. The growing of fine wool shews itself certainly in a different point of view than when merinos were first introduced, and even but a few years ago. During some years this branch of industry combated many difficulties; prejudice and the old routine were predominant with the farmer. It was also thought that this country would not admit of raising the finest kind of wool; but at present the intelligent and observing farmer is otherwise convinced. And the period has arrived, when the utmost attention ought to be paid to the quality as well as to the quantity, and produce that kind of wool of which the country is immeasurable deficient, but towards the supplying of which it is making rapid strides. I will not go into an examination of the motives which caused a part of the wool-growers to improve the carcass and heft of fleece more than fineness and quality. Many owners of flocks undoubtedly have not a clear conception of the condition in which the wool business is at present, and the aim after which they ought to strive. It would be vain to depend for the prosperity of their flocks on the measures of the general government alone: These may be ever so wise, and executed with the strictest attention, but they would be without much effect if the wool-grower has not a right idea of his own business.

The study of wool has not received that attention which it merits. Many breeders of sheep managed their flocks by chance, any how. But it must be confessed, however, that many manufacturers showed a sort of indifference as to the quality of the wool, and wool-growers receiving their opinions fell into the same error—prompted, probably, by a temporary profit. However, the manufacturers have, in the path of accomplishment, made advances every year; and the more the art of manufacturing improves, the more skill they get in judging of the raw material they use. For the mean time the producer should keep pace with the manufacturer, as it in my opinion can but improve their condition; as they will not be liable to be imposed upon much by the purchaser, if they know the relative affinities and qualities of their own wool. And let me here remark, that in my opinion, founded on my own experience, this country is well calculated to raise fine wool; and is far superior to it than Germany, and even Saxony herself, where it is well known the finest wool is raised. All the requisites for raising fine wool are bountifully supplied. Healthy and sweet pastures, pure water and a pure air, are elements in which sheep delight. If we only do our duty and manage our flocks as we ought, success is almost certain.

The study of fine wool and management of sheep, has been an interesting employment to me, and much time have I devoted to these interesting animals. Having had opportunities to acquaint myself with the mode of managing sheep in Germany, and for the last five years having kept a flock of full blooded Saxon sheep in this country, I will submit a few remarks

ON THE FEEDING AND CARE OF SHEEP.

1st. *Of summer feeding.*—This consists generally in pasturing. For particular local situations it would be advisable to keep them in the yard, as is the case with some flocks in Saxony, and feed them with green clover, lucerne, esparcette,* or vetches and horse beans sowed together, and fed in racks. Pastures ought to be free of boggy and marshy places—in general more dry than wet is indispensably necessary, for the grass and other plants which grow in such places, even should they become dry by continued dry weather and the heat of the sun, is extremely injurious, as it causes relaxation in the organization of the sheep, which cannot perform the functions of secretion, and the most fatal disease, the rot, will follow.

By what is said above it follows, that pasture seeded with herdsgrass, clover, &c. turnip fields especially sown for that purpose, stubble fields and hilly pastures, are well adapted and healthy for sheep; but the main condition is that such pastures be not wet, and afford sufficient nourishment. The old maxim, that sheep will not eat bad grass as long as they can satisfy their appetites on good, holds true here: they shun or avoid places where unhealthy grass grows by instinct. Enough healthy nourishment therefore is the best remedy for sheep against eating bad plants.

Next to the above requisites, pure water, with which the animals may slake their thirst, is an important object to the animals. Where they have access to water once or twice a day, they will never drink too much and hurt themselves, but where they are debarred from it, by prejudice or otherwise, they are apt to drink of the first puddle they come to, and infallibly hurt themselves; whereby, probably, the old prejudice arose, that water is hurtful to sheep to drink.

For the reason that wet grass, eaten in duration, is detrimental to the health of sheep, farmers in Germany do not let their flocks go to pasture in the morning till the dew is almost off the grass. If by continued wet weather it cannot be avoided to pasture on wet grass, a foddering of dry fodder, if but of straw, is very useful and necessary, together with a mixture of juniper berries and other aromatic herbs and salt

* American Farmer, vol. xiii. page 341.

* Sanfoin.

once a month. Latterly I have found tar to answer as good a purpose. These are not only useful but necessary provisions to preserve the organs of the whole system against relaxation, arising from protracted wet pasture.

2d. *Of winter feeding.*—To the keeping of sheep during the foddering season, is good hay from dry meadows, well cured clover cut when in full blow, lucerne, &c.; all kinds of roots, such as potatoes, turnips, carrots, mangel wurzel, &c. are also beneficial and serviceable. One needs only by regular feeding, proportion the quantity to their nourishment, to suspend the feeding of grain altogether; but when the raising of roots is not attended to, some grain ought to be fed, especially to lambs.

In respect to feeding, it is generally acknowledged that the quantity and quality ought to be adequate to the nature and economy of the animal, to keep it in good and thriving condition, bordering on being rather fat without going over to fatness. It cannot be denied that fatness stimulates sheep and disposes them to sickness. Leanness, when occasioned by too little nourishment, on the contrary, causes weakness and disposes to sickness, besides such animals shearing less wool. He who cannot maintain his sheep vigorous, or is not disposed to do so through ill advised economy, may not expect to make his fortune by fine sheep.

Periodical changes between abundant and too little nourishment, is not less detrimental. It endangers health and strength, or both may severely suffer, and the wool grow uneven and thus become reduced in value. It cannot be understood, however, that ewes rearing lambs, and rams during the rutting season, ought not to be better fed than without these circumstances; on the contrary, it is necessary to give them more nourishment, since there is more chyle and strength wasted.

In respect to the effect of grain, roots and hay upon the increase of flesh, wool and tallow of fine sheep, we are indebted to M. de Raumer, for his experiments, which throw much light upon the subject, and whose results are the more credible since they are in accordance with the experience of others. I communicate his results because they may be considered as a sure basis in this matter.

	Increase of weight in the living animal.	Produced wool.	Produced tallow.
	lbs.	lb. oz.	lb. oz.
1000 lbs. Potatoes, raw, with salt,	46½	6 8½	12 5½
1000 " do. without salt,	44	6 8	10 14½
1000 " Mangel wurzel, raw,	38½	5 3½	6 5½
1000 " Pease,	13½	11 11	11 6
1000 " Wheat,	155	13 13½	59 9
1000 " Rye, with salt,	90	13 14½	35 11
1000 " do. without salt,	133	12 10½	43 8½
1000 " do. meal, wet,	129	13 6½	17 7½
1000 " Barley,	136	11 6½	60 1
1000 " Oats,	146	9 12	12 8
1000 " Buckwheat,	120	10 4½	33 8
1000 " Good hay,	58	7 10½	12 14
1000 " Hay with straw, without other fodder,	31	15 8	6 11
1000 " Whiskey-still grains or wash,	35	6 1	4 0

Potatoes, raw and cut into slices, sheep ate with good appetite and greediness in duration—one sheep ate daily 7 lbs. with straw interchangeably after the potatoes, they remained lively and healthy, and drank 1½ quarts of water per head in 24 hours.

Mangel wurzel, sheep ate with greediness, 8 lbs. per head daily in duration, interchangeably with straw as with potatoes; they drank 1 quart of water per head in 24 hours, and remained likewise healthy.

Pease, 2 lbs. per head daily readily eaten in duration; drank from 2 to 3 quarts of water per head in 24

hours, and remained perfectly healthy. In an unsoaked condition pease are hard for sheep to eat and wear their teeth.

Wheat, sheep ate greedily 2 lbs. per head in duration, and drank from 2 to 3 quarts of water in 24 hours; made them very lively, and remained perfectly healthy.

Rye, sheep do not eat readily, and it does them little good, as is exhibited in the above results of the increase of weight; they drank from 2 to 3 quarts of water daily.

Barley, 2½ lbs. per head daily in duration with greediness, and sheep do extremely well on it; they drank 3 quarts of water per head in 24 hours.

Oats, had the same effect as barley upon the appetite and health.

Buckwheat, sheep eat with great avidity, and with the best results upon the health and liveliness of the animals.

Good hay, 4½ lbs. per head daily in duration, and drank 2½ to 3 quarts of water in 24 hours.

Flag hay, rush, &c. the lighter and the less sheep eat of it the better, as it make them weak and inactive; and two of the sheep on which the experiments were made, became sick—one was killed, the liver and gall of which were found infected, and the other died.

M. de Raumer also considers, in accordance with M. Von Thaur,

- 1 lb. oil cake meal to be as nutritious as 2 lbs. of hay.
- 80 " clover hay, like 100 lbs. ordinary hay.
- 84 " vetches, exparsette and lucerne, the same.
- 200 " good sound straw of pease and vetches like 100 lbs. hay.
- 300 " barley and oat straw like 100 lbs. hay.
- 400 " wheat straw like 100 lbs. hay.
- 100 " turnips nourish as much as 40 lbs. potatoes or 50 lbs. mangel wurzel.

The above I have for a number of years, say 12 or 13, taken as my guide in foddering sheep, and have found that my flock did extremely well whenever I proportioned their food according to nutritiousness, and in such manner as that 2 lbs. of good hay would give to each animal. It, therefore, I fed potatoes or other roots or grain, I gave straw with it in order to fill the belly. The best way I have found to be, a foddering of straw in the morning before roots. It seems to be congenial to the nature and economy of the sheep, and digests better than roots on an empty stomach. This practice is pursued by the most intelligent breeders of sheep in Germany.

Shelter against the inclemency of the weather is the third consideration in the care of sheep. It is almost as necessary to the health and good condition of the sheep as food itself, and for this reason stables built for that purpose are of great benefit. Not only do sheep do much better, but it is also a great saving of fodder and manure. The latter is as important as the former; for manure, properly applied, is money to the farmer—and it is well known that sheep manure is of the best kind. These stables ought to be so constructed as to admit of great quantity of hay being put over head; and for this reason I would recommend a side hill facing the south, and a dry spot around it, for their location. Each full grown sheep requires six square feet including racks. These ought to be so constructed as to have a manger attached to each, for the purpose of feeding grain and roots, and to catch the hay the sheep draw through the racks. The stables ought to be eight feet high at least, nine feet is preferable, and sufficiently ventilated. It is also necessary to have windows for the purpose of light. The difference between wool grown in a dark and light stable is really surprising. In a dark one,

The clover in Germany is finer than that in this state—resembling more the Pennsylvania clover. It is cut when in full blow and well cured in small cocks. If clover is spread it loses a considerable share of the leaves, which reduces it in goodness.

wool does not get the brightness it has in a light one. Of this fact I have witnessed the most surprising proof. Over head the stable ought to be tight, that no fodder, chaff, &c. may fall into the wool, which reduces it in value. The stables ought to be littered with straw from time to time, to keep the wool clean and add to the comfort and health of the animals.

In the foregoing pages I have given, in an imperfect manner, (not understanding the English language correctly,) a few hints on the care and management of sheep. Should they be of any benefit to my brother farmers, the writer will consider himself amply paid.

HENRY D. GROVE.

JESSE BUEL, Esq. Cor. Sec'y.

(This gentleman has been familiar with the management of sheep from early youth, in a country which excels in fine wool. His management of them here has hitherto been uncommonly successful, not losing one in a hundred. I am informed, during a winter. No sheep farmer can fail to derive advantage from a visit to this intelligent and unassuming foreigner.—J. B.]

(From the New England Farmer.)

SWINE.

MR. EDITOR,—I observe in your paper of the 20th of March, a request for information how to prevent swine from devouring their young. I have heard my neighbors make complaints on this subject this season—and believe others have been induced, year after year, to pour forth similar lamentations in the New England Farmer.

But, sir, I believe the difficulty rests more frequently with the farmers than with the grunTERS. Only imagine, Mr. Editor, the poor animal in the "most delicate circumstances," on looking about for a comfortable place to perform her *accouchement* finding only a cold bed of mud, or a desolate pen, perhaps with, and perhaps without a covering, and the thermometer at zero! Or perhaps the considerate owner has thrown into one of these dreary abodes a huge bundle of straw, thinking "nature will do the rest"—and the old sow will soon arrange it into a suitable bed for her young, and then ask yourself—can even a hog, in such a place, do justice to her anticipated charge? The truth is, there is no animal so abused as this despised quadruped—the Jewish law, which forbade their use, was doubtless promulgated by Moses out of pure humanity. And when it was repealed by a christian code, it would have been well had a clause been inserted that "no man should keep hogs who would not take care of them."

No animal in the farmer's possession more completely reflects the character of the owner. If well fed, kept warm, and clean—they thrive, grow and fatten; but neglected, they are ill-shapen, mean, dirty brutes—and the whole farm is disturbed at night and by day by their squealing, fighting, and breaking out of bounds.

One gets a warm place in the southeast corner of their comfortless pen, another stronger comes in and demands possession, a battle begins—the weaker is ousted, and so the night is spent in continual conflict; for without, a strong northwester soon admonishes them, that in exercise, though in battle dire, is their only hope of obtaining a *modicum* of caloric.

But now the farmer discovers that it is necessary for family purposes that the hogs should be parted, and a few old rails are run across the bed-room, to accommodate the hopeful mother. The northwester finds a clear course over the backs of the others, and injects its merciless shafts upon the tenant of the private apartment, and the fresh straw is in vain mouthed about the house in the expectation of a spot being found fit for the interesting deposit. But there can be no more delay, and the little grunTERS come forth! Old Boreas spares not, and is greeted by a most piteous squeal. The nervous mother (no wonder she is seized with hysterical irritability,) takes alarm, and true to nature starts up, and in resewing

her progeny from seeming danger treads on the little squeaker, ends his mortal sufferings, and takes one roaster from the farmer's market cart; another follows—and another—and so on to the end of the chapter. The "poor, forlorn, afflicted, desolate" now consoles herself, the only way she can, by enjoying for once a good repast, not the less palatable for being of her *own flesh and blood*. Then follow the lamentations; and learned disquisitions are sent for insertion in your columns, and "powdered charcoal," "animal food," "corn meal," and "milk porridge," are recommended to cure the *unnatural appetite!* and if they are faithfully administered, "in season and out of season," that is every day, I will answer for it, you will have less lamentation and more pork.

Of one of the neighbors alluded to, who made the complaint to me of "his breed of hogs being run out," for they eat up their pigs—I asked in which pen he kept his sows? (for I knew all about his premises) and he answered "in the pen by the wall in the lane." And it is just such a place, Mr. Editor, as I have described. On the north, an open, single wall, on the south a barn too near to let a winter's sun approach more than a few hours in the day, and on the west a few old boards, just enough to keep the store pigs from "hiring lodgings" in the finished apartments; and the southeast corner, just the one that *might be open*, is the only one closed. I did not wonder his pigs had "run out," I only pitied them that they could not *run away*.

Now, sir, I'll tell you my method, for when trusting to others I have had "pigs eaten up" in abundance, but I look to them now myself, and after keeping them all the time in good flesh, when the period of yearning is near I take the sow apart and give her free access to a *warm bed-room* of ample dimensions in my barn, with a *dry plank floor*, where the shingled walls prevent the entrance of cold, rain or wind, with just enough straw to amuse her "moments of anxiety," but not enough to allow a single pig to cover his head and lose his road to the fountain of comfort. And I have now running about my yard as fine a litter of roasters, just four weeks old, as ever graced Boston market.

I shall be very happy if I have been able to throw any light upon the mysterious science of raising pigs in the winter (for whether summer or winter I find the same result with my *new invention*) for the benefit of your "Constant reader,"—and remain, your humble servant,

ANOTHER.

(From the New England Farmer.)

SWINE.

MR. FESSENDEN: Milton, March 23, 1833.

Sir,—In answer to "*A Constant Reader*" on the best method of managing sows with pigs—I would recommend the following method which I have practised with good success.

Separate the sow from the rest of the swine, six or eight weeks before her bringing forth, so that she may become accustomed to her pen. Care should be taken, however, to have her pen kept dry, and well littered; always give them litter enough so as not to be obliged to give any for six days before the time, for nothing disturbs the sow more than an abundance of litter, and which, in my opinion, has a great tendency to induce her to destroy her young. If the sow is with the other swine till within a few days of her bringing forth, and then separated, she will not get accustomed to her pen, and by thus being disturbed, she will be pretty sure to destroy her pigs.

I do not think there is any thing in the breed or nature of sows, unless disturbed or mismanaged, and if so I think it very natural for them to destroy their young.

I have known, and it is not at all uncommon for young sows to destroy their first, and protect their succeeding litters; and I have known them to protect their first and destroy their succeeding litters; but in

most cases I find that it is owing to disturbance or mismanagement.

Raw salt pork cut in small pieces, and given, will prevent them from eating their pigs. I have seen it given after they had ate two or three of their litter, with good success. But to prevent any mischief it should be kept by them at this time.

As to the form of the sty, and higness of the yard to be occupied by swine for manure, these depend greatly upon the number kept. For three or four I would recommend a building of the following dimensions, say eighteen by eight, entrance to feed, at the centre on the side, alley three feet wide, window in the centre opposite the door, two troughs, one on each side next to the alley, yard twenty feet square, will have a partition through the centre from the centre of the building, entrance for the swine on each side, one foot from the alley with sliding doors, communication from one yard to the other by sliding door next to the building. A building and yard thus constructed will be found plenty large, and very convenient; you have plenty of room at each end to feed, and for them to lie dry and warm, which is very beneficial in the growth of your swine. I consider a yard of the above size plenty large enough for three or four swine, if properly attended to, they will make but little manure without materials, you should replenish the yard with loam or wash from the road, with vines, weeds, &c. as often as occasion may require.

Yours, respectfully,

D.

(From the New England Farmer.)

SWINE.

MR. FESSENDEN:

In your paper I observed an inquiry in relation to the best method of treating sows with pigs, &c.—Neither the "Farmer's Assistant," nor "Bannister's Husbandry," nor the "Hon. O. Piske," have hit the right nail on the head. For some cause, or on some account, whether from "hysteric irritability" I know not, but so it is that about the time of sows' yearning they have a great craving for animal food—this I know from experience, and have been careful for about a week before my sows were about to farrow, to give them some butcher's refuse meat, which does not cost much; it easy to be procured give them a plenty, and I will venture to say they will not eat their pigs.—Your inquirer says thousands of pigs have been destroyed the last year by sows. Now if my method of treatment is a preventive, and I verily believe it is, the information is of more real worth to the community than a history of all the snipes, owls and bob-links that Mr. Audubon ever heard of.

A SUBSCRIBER.

(From the Maine Farmer.)

TO RELIEVE CHOKED CATTLE.

MR. HOLMES:

It is agreed, both in Europe and this country, that there is nothing so safe and efficacious for a creature that is choked, as tarred rope of proper dimensions, with the tar well worked in to stiffen it when made. I have been led to remind my brother farmers of this simple thing, because one of my neighbors recently lost a cow by being choked, and another came near losing a valuable ox, in the same way. Both of them might have been relieved in a few minutes, had such a rope been at hand, or even in the neighborhood, but this was not the case, and the owner of the cow used an improper stick, which hastened her death. I believe we shall more frequently see the need of such an apparatus or instrument, as we begin to feed more with roots. In Great Britain, where they feed extensively with roots, the farmer who was without one would be considered a very careless man.

I hope some one at least in every neighborhood will procure one or two of the following dimensions. One suitable for applying should be three quarters of an

inch thick, and forty inches long, with a strong loop affixed to the end, that it may be the better managed by the operator. For an ox of a large size it should be an inch thick, forty-eight inches long, exclusive of the loop. The cost may be twenty-five or thirty cents.

Yours, &c.

CARE.

(From the New England Farmer.)

RATS—a singular fact.—Mr. Elkanah Andrews, of Taunton, planted the last year, a field with corn in drills, at some little distance from any building or wall, and say about one-fourth of a mile from the village. After the corn came up he found that much of it was pulled up by some animal, but by what kind he could not determine. Some said that it might be done by squirrels; but no squirrels were seen about the premises. Others thought that the mischief was done by birds; but no birds were seen near the place. The work of destruction went on night after night, and it was supposed that the injury was done very early in the morning, and hence the depredator eluded the observation of the owner. Mr. Andrews visited his field very early in the morning, but made no discovery; no squirrel nor bird was seen, yet the corn was pulled up as before. At last he visited his field at midnight, and having secreted himself, he by the help of moonlight discovered his enemy—an army of rats from the village.

(From the New England Farmer.)

FENCES.

As soon as practicable put your fences in thorough repair. Poor fences may be numbered among the worst of bad things, saving Canada thistles, which can encumber a farm. In consequence of low, frail and tottering fences, cattle acquire a habit of wandering, and become turbulent as a gang of highwaymen. A farmer with poor fences can no more sleep quietly, than if he "were pillowed on clouds and cradled in a storm."

The kinds of fence in most general use in this country are post and rail fence, Stone wall, log fence, worm fence or Virginia fence, and hedge fence. These should vary according to difference of soils, plenty and cheapness of materials, &c. Mr. Preston of Stockport, Pa. recommends setting posts with the top part in the ground; and asserts they will, in that position last three or four times as long as when they are set with the butt ends down. He also advises in making post and rail fences always to place the rails with the heart side up. The posts should be set at least two feet in the ground. If those parts of the post, which are to be placed in the ground are burned in a hot fire till quite black they will last much longer than they would otherwise. It has been found useful to cut posts so long and mortise them in such a manner that when the lower ends become rotten they can be turned upside down.

The Farmer's Guide says, "Post and rail fences and board fences are very good when the soil is dry. In a wet soil the posts will be moved by frosts. Red cedar, locust, and chestnut, are best. Butternut, black walnut and oak are pretty good, lasting about fifteen years. For the rails, cedar is best, lasting perhaps an age. If timber is scarce, and the ground is level and free from stones, post and rail fences set in a bank made of the earth of two small ditches thrown up together ought to be preferred. If the posts are too small to have holes made through them, the rails may be flattened at the ends, and fastened to the posts with spikes, or with wooden pins well secured." It has sometimes been the practice to set rows of trees 10 or 12 feet asunder, and insert cedar rails into the trees, the latter serving as posts.

When ground is wholly subdued, and the stumps of its original growth of trees quite rotted out, stone walls, properly made are the best and cheapest fences. On a hard sandy or gravelly bottom a wall will stand many years without repairing. On a clay

or miry soil, the foundation should be laid in a trench, nearly as low as the earth freezes. But a wall of flat or square shaped stones, will stand tolerably on any soil on the surface.

Prices Current in New York, April 13.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, 11 a 13½; Upland, 10 a 12; Alabama, 10 a 13. *Cotton Bagging*, Hemp, yd. 13 a 21½; Flax, 13 a 14½. *Flax*, American, 7 a 5. *Flaxseed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a 5.62; Canal, 6.12 a 6.37; Balt. How'd st. 5.75 a 5.87; Rh'd city mills, 7.00 a —; country, 5.56 a 5.62; Alexandria, 5.62 a 5.69; Fredericksburg, 5.56 a 5.62; Petersburg, 5.62 a 5.69; Rye flour, 3.75 a 4.00; Indian meal, per bbl. 3.75 a 4.00, per hhd. 16.50 a 17.00. *Grain*, Wheat, North, 1.12 a 1.16; Vir. 1.18 a 1.20; Rye, North, .82 a .85; Corn, Yel. North, .70 a .73; Barley, .60 a .62; Oats, South and North, .45 a .46; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.50 a 10.00; *Provisions*, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, 7½ a 9.

FINE MALTESE JACK FOR SALE.

The Subscriber has for sale (on commission) a fine Jack of the breed of the Knight of Malta and Royal Gift. He is six years old, a very powerful animal, a sure foal getter, very gentle and easily managed. Price \$200, delivered in Baltimore. The following are the dimensions of the animal furnished by the owner:

- 4 feet 2 inches in height, (12½ hands)
- 5 " 10 " round the body.
- 3 " 6 " round the neck.
- 1 " 4 " round above the knee.
- 1 " 0 " round the knee.

Apply to I. I. HITCHCOCK,
American Farmer Office and Seed Store.

SILKWORM EGGS

For sale at the American Farmer Office and Seed Store, at \$1 per thousand. They can be sent safely by mail if ordered immediately, before the weather becomes warm.

I. I. HITCHCOCK.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED. Also

MAMMOTH PUMPKIN SEED.

EARLIEST FRENCH CABBAGE do.

EARLY FRENCH, or PARIS WHITE ONION do.

ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

I. I. HITCHCOCK.

PUBLIC SALE OF DURHAM SHORTHORNED CATTLE AND HIGHLY IMPROVED SHEEP.

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEIFERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5,—8t

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1½ " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.

Amer. Far. Office.

ORCHARD AND HERDS GRASS SEED

For sale at the American Farmer Office and Seed Store, by I. I. HITCHCOCK.

Clean Orchard Grass Seed \$3 per bushel. A lot of this seed imperfectly cleaned will be sold at \$2.50 per bushel. Herds, \$1 per bushel.

200,000 WHITE MULBERRY TREES.

The Subscriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the *Morus Multicaulis*, or Chinese White Mulberry.

ASA BUTLER,

Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12,—6t.

FIELD AND GARDEN SEEDS, &c.

J. S. EASTMAN offers the following Seeds for sale, viz. CLOVER, TIMOTHY, MEADOW OAT GRASS, MILLET, LUCERNE, COW PEAS, LARGE YELLOW PUMPKIN, and EARLY WHITE CORN.

Also a general assortment of GARDEN SEEDS, and WHITE ONION SETS.

Likewise in store, a general assortment of AGRICULTURAL IMPLEMENTS, embracing almost every article in the farming line, which he will sell low for cash or approved city acceptances.

He must decline opening any new accounts, except with those who will be liberal customers, and can give good references; and all such accounts he expects to be promptly settled once a year; and those who have accounts standing on his books over one year, are desired to settle the same. All Grass Seeds must be considered cash. Liberal discounts will be made on all implements purchased by merchants and others to sell again.

Feb. 15.

SINCLAIR AND MOORES NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired *Grevillea*.) double *Altheas*, *Honeysuckles*, *Corcorus*, *Lilac*, *Snowberry* and *Buffalo Berry Trees*, (*Chinese Alanthus*, white flowering *Horsechestnut*, and silver leaved *Maple*, all of large size, (the latter is a beautiful shade tree,) large red and white *Dutch Currant*, red and white *Antwerp* and other *Raspberry Bushes*, *Strawberry Plants* assorted, (large plants raised carefully for sale,) white and black *Walnut*, *Quinces* assorted, *Peach Trees*, a large stock of very superior kinds, *Apple*, *Plum*, *Pear*, *Cherry* and *Neetarine Trees*, *Grape Plants* and *Cuttings* of several varieties, *Asparagus* and *Hop Roots*, and *Thorns* for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets.

Feb. 22.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—A slight decline will be noticed in the prices of flour and grain. This is owing to the abundant arrivals. Large quantities of corn have been disposed of at rates within our quotations, while none but very prime commands the maximum rate. In flour a fair business is doing at our quotations. The wagon price of Howard street is somewhat unsettled; from \$5.18½ to \$5.25 will probably be near the mark.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 6.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 395 bbls. Md.; 51 bbls. Ohio; 20 bbls. Ken. and 2 bbls. Vir.—total 378 bbls.

FLOUR—best white wheat family \$6.75 a 7.25; super Howard street, 5.37½ a 5.44; city mills, 5.37½ a —; city mills extra 5.50 a —.—CORN MEAL bbl. 3.25;—GRAIN, bested wheat, 1.15 a 1.17; white do — a 1.25;—CORN, white, 65 a 65, yellow, 68 a 70;—RYE, 65 a 70;—OATS, 40 a 43;—BEANS, 75 a 80;—PEAS, 65 a 70;—CLOVER SEED 8.00 a —.—TIMOTHY, — a —.—ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.00 a 2.50.—Herds, — a —.—Lucerne — a 37½ lb.—BARLEY, FLAX SEED, 1.50 a 1.62.—COTTON, Va. 10 a 12—Lou. 12 a 13—Alab. 12 a 13—Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½—WHEAT, hhd. 1st p. 29½ a —; in bbls. 30½ a 31½.—WOOL, *Washed*, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. *Unwashed*, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18.

Hemp, Russia, ton. \$200 a 210. Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 38;—Plaster Paris, per ton. 5.25 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.50 a 6.25.—Oak wood, 3.00 a 3.25; Hickory, 4.50 a 5.00; Pine, 2.25.

CONTENTS OF THIS NUMBER.

Editorial; American Wine; A worthy Example; To Destroy Cockroaches—Exhibition of Plants at the Horticultural Society—On the Culture of Indian Corn, by Jesse Buel; Time of Planting; Preparation of the Seed; Manner of Planting; Harvesting the Crop—On the Planting of Live Fences; Advantages over all other kinds; Plants to be preferred in different situations—Experiments on the Culture of Squashes and Melons on ridges—Culture of Asparagus—Henry D. Gover on Sheep Husbandry; Feeding and Care of Sheep in Summer and Winter—To Prevent Swine from Destroying their Young—Another mode—And another—Tanned Rope used to relieve Cattle when Choked—On Making and Repairing Fences—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL.

Agricultural and Horticultural Establishment:

COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, APRIL 26, 1833.

ANGORA GOATS—ANGORA CATS.

The following extracts of letters from Commodore Porter to J. S. Skinner, Esq. late editor of the American Farmer, will be read with interest. We do hope that some of our spirited minded men will avail of the opportunity now presented of importing the Angora goat. There are some gentlemen of our acquaintance who could do this for their country without difficulty; and there are very few acts they could perform that would confer upon it a greater benefit, or of the credit of which they could have more reason to be proud.

—Pera, Jan. 19, 1833.

"I believe I have mentioned to you something about the Angora goats, and the beautiful silkiness of their hair, finer even than silk, and softer. It is of that which they make the Cashmere shawls which cannot be equalled by any manufacture of silk. The animal itself is a beautiful and majestic creature, and I think the introduction of it into the United States would be highly advantageous to the interests of the country. In the fine fabrics it (the hair) would supersede the use of silk. And I would, if I were rich enough, spare no expense in introducing the breed into our country—but alas! a *charge des affaires* with an expensive establishment at one of the most expensive courts in the world, finds it not only hard, but actually impossible, to make both ends meet, with a strict economy, amounting to meanness. I am willing to do all I can to promote the interests and improvements of our country, by the introduction of many things, but I have not the means. The converse of the proposition of the apothecary, in Romeo and Juliet, will suit my case.

"However, as I cannot send you the animal for the want of means, I shall send you a skin, and that alone has cost me five dollars. Then judge what it would cost, to send a person expressly to Angora to purchase and bring the animals to me, to bribe the Mussulim to let them come *unaltered*, for their departure in a *perfect* state is prohibited; their passage and provisions to the United States, and the pay of the person on board to take care of them. All this you may readily conceive would be no trifling affair, yet *coûte qui coûte*, were I able, I would send three or four pair home, and have them placed in different sections of the country to propagate.

"For fear of the miscarriage of the skin, I send you a specimen of the hair, here is a beautiful substance, finer and infinitely stronger than the finest and strongest silk, growing on the back of a hardy animal, the cost of the keeping of which is nothing compared to the cost of keeping a sheep—and the value of the produce per pound, is as superior to silk, as silk is to the wool of the merino. The value of a Cashmere shawl here, is from three to four and some five hundred dollars. The best of the French silk imitations may be purchased for thirty dollars.

"The cost of the introduction of this animal into the United States, would not be much, for two or three public spirited men of fortune to undertake, it would be nothing compared to the expense they were at, in introducing the rotten, mangy, short lived merino.

"The goat is a hardy animal, long lived and subject to none of the diseases of the sheep. You may, by the skin I send you, form some judgment of what the fleece would be worth, even at the price of silk—but I assure you that an Angora goat of the *neuter gender*, now in my back yard, has a fleece of double the length of the fleece I send you.

"The French, you know, were at great expense in

sending out Mr. Jobert to obtain the breed. What they have done with it, or whether it was genuine, I know not; but the breed can be had genuine, funds only are necessary; for my services, you know, are always ready, whenever I can do any thing which may be likely to prove beneficial to the country."

ELECTRICAL PROPERTY OF THE ANGORA CAT.

DEAR SKINNER:

Pera, Jan. 22, 1833.

I last evening made what to me was a great discovery.

I had often seen the electric sparks fly off from the back of a cat, while stroking it with the hand in the dark, but never before felt the electric shock.

I was playing with my Angora cat, it was lying on the table on its right side; I laid my left hand open on its neck, my thumb on the hind part of the shoulder joint and stroked down the hair with the right hand. I felt several very smart shocks of electricity which evidently gave great pain to the cat, as they did to me.

I mention this to you, that other experiments may be made, and if electricity is beneficial in some diseases, (as it is said to be,) I feel confident that it may be obtained from the cat, sufficiently strong for all medical purposes.

At the time this was discovered the weather was dry and frosty, and the room warm.

I caused some of the servants to place their hands as I had placed mine, while I stroked down the hair of the cat, and they complained that the shocks were very painful to them. Whether this is peculiar to the Angora cat, and to the *neuter gender*, can be easily ascertained. The most frequent shocks were felt in the little finger, which rested on the root of the left ear—but the severest shocks were felt in the thumb which rested, as before said, on the hind part of the shoulder joint.

I placed my hands in other positions and could produce no shock whatever.

If this is a new discovery it is worth following up. It may be as old as the hills for what I know, but I never heard of it. Yours truly, DAVID PORTER.

J. S. SKINNER, ESQ.

The commodore corrects an error we made in one of his letters last spring, giving a description of a beautiful tree, some of the seed of which he sent to Mr. Skinner, (see page 115, vol. 14.) We published it *rare tree*—it should have been *rose tree*.

"* We have noticed an article on the prevention of bots in horses, published in the New England Farmer of the 13th March, and credited to the American Farmer, a very valuable paper published at Baltimore. It is an extract from an article originally published in the third number of this paper, in October last.—We have noticed the circumstance not merely from the vanity of reclaiming the article; but, on looking over our account current with the New England Farmer, we find ourselves so much indebted to that valuable paper, that we feel obliged to avail ourselves of every little payment, though we may never be able to balance the account. We are also the debtors of the American Farmer, but feel assured that that publication is too wealthy, and too magnanimous a creditor, to need or require any thing which is not lawfully its own.—Northern Farmer.

[On referring to our files we find that the article in question was copied by us and duly credited to the "Northern Farmer," on the 2d November, 1832, No. 34, vol. xiv. The New England Farmer doubtless credited it to the American Farmer by mistake.—Ed. Am. Farmer.]

HAWKS TO FRIGHTEN BIRDS.—A hawk, confined in a cage and placed in the garden or field, is found to be of more service to frighten away birds than other scare-crows, including a sleepy boy.—London's Gardener's Magazine.

WINSHIPS' NURSERY.—We have just inspected the catalogue recently published by the Messrs. Winships, Brighton. It comprises a list of fruit and forest trees, shrubs and flowers, for sale at their nursery, among which are 120 apples, 120 pears, 88 peaches, 54 plums, 18 apricots, 39 grapes, and numerous varieties of apricots, nectarines, quinces, figs, almonds, mulberries, raspberries, gooseberries, strawberries, and currants. The names of ornamental forest trees, ornamental shrubs, evergreens, vines and creepers, and honeysuckles, fills about ten pages. Of roses, there are no less than 288 varieties, besides those placed in separate classes as Scotch and China roses, of which there are 61 Scotch and 25 China. To this magnificent assortment of roses succeeds 41 varieties of the pæony—a brilliant collection, furnished by their friend Admiral Coffin. The collection of carnations, pinks, chrysanthemums, lilies, and herbaceous perennial flowering plants, occupies about a dozen pages of the catalogue. From this abstract it will be seen that agriculturists may find a beautiful supply of the useful and profitable, while ladies and gentlemen of taste can be equally well accommodated in their choice of the mere beautiful and ornamental. The nursery is five miles from Boston, over the Western Avenue—a pleasant ride.—Boston Courier.

(From the New York Farmer.)

PLOUGHING IN HOT DRY WEATHER.

MR. FLEET:

February 11, 1833.

In the fifth volume of the New York Farmer, I have noticed some editorial remarks concerning ploughing and hoeing in the heat of the day. You will observe that the object is not to condense the moisture of the atmosphere. This moisture, in order to afford food to plants, I conceive must be dissolved in caloric. The moment it is condensed it affords little or no support to plants; the circulation of moisture in plants is said to be very similar to that of the arterial and venous circulation in animals, that is, the moisture received by the capillary vessels of the leaves reaches the roots, and little of this moisture ever reaches the earth, but is taken up before it reaches there by the leaves of plants. The moment this is condensed it can no longer enter by the capillary vessels into the vegetable circulation. To plough then in the afternoon, or to place cold bodies in the neighborhood of plants, would be rather injurious than beneficial.—Such are my ideas on this subject, and I remain,

Yours, &c.

R. M. W.

INVENTION AND ECONOMY.—The editor of the Eastern Centinel, says, that an ingenious tavernkeeper, of that borough, has succeeded in the profitable desideratum of making his fire pay for itself, by burning limestone and coal together, in equal parts. The fire must be kindled in the morning with pure coal, but through the day rather more limestone than coal is used. He thus saves several bushels of coal per week and procures several bushels of lime. To all appearance the stoves emit as much caloric as when filled with pure coal—the cylinder was as usual, in a red heat.

COLLAPSE OF THE LUNGS.—Some young children, when they cry, are apt to suffer a collapse of the lungs or, in the language of the parents, "hold their breath." This occasions great alarm to parents, and is a real evil, for it is sometimes with difficulty that the breath can be recovered. The following is an easy and certain remedy: Close the nostrils of the child with the thumb and finger—put your mouth to the child's mouth, and blow smartly. The lungs will be inflated, and the music will recommence in a moment.

G. n. Farmer.]

P.

* We have seen this specimen and it really deserves all that the Commodore says of it.—Ed. Am. Farmer.

The weight of mud daily carried down the river Ganges is calculated at seventy-four times the weight of the great pyramid of Egypt.

AGRICULTURE.

(From the New England Farmer.)

AN ADDRESS

Delivered at Bridgewater, Nov. 7, 1832, before the Plymouth County Agricultural Society.

By REV. JONATHAN BIGELOW, OF ROCHESTER.

The ultimate design of Agricultural Societies is improvement. With them all else ought to be either subsidiary or subordinate to progress in the art, and improvement in the various methods and products of agriculture. Among the various means which this society has adopted to subserve these objects, is the institution of a public address on the day of anniversary. I regret that the lamented death of the distinguished individual whom you selected for your first orator, has devolved this duty on one but poorly qualified, either by a study of the science, or by practice in the great and difficult art of agriculture, to add any thing to the stock of present knowledge or present improvement. I have thought, however, that perhaps the half hour before us might not be unpleasantly, nor altogether unprofitably spent by noticing, 1st. the moral tendency and effects of agriculture on those engaged in it.

2d. Advert to the fact that agriculture is, and from the nature of the case ever must, to a great extent, be a progressive art and science; advertising also to some points where improvement is still needed.

I shall first notice the moral tendency and effects of agriculture upon those engaged in it. I use the word *moral* here, in its widest latitude of meaning, embracing all effects produced on mind and character.

That occupation it will be conceded is the most favorable to moral development which is attended by the fewest temptations, which furnishes the most salutary lessons of instruction, and which is most favorable to a perfect development of the bodily as well as mental powers. I say bodily as well as mental, because the mind sympathizes with, and in its character, thoughts and sentiments, is very much affected by the body with which it is connected. Probably no mind ever received a full development of all its powers, connected with a physical system deranged; or only partially developed. The various labors of the agriculturist bring all the muscles of the human system into daily action; thus causing a simultaneous development of them. This keeps up that just balance in the system which is indispensable to health, vigor and cheerfulness; and the fact that all his labors are performed in the pure air of heaven, gives tone, energy and durability to the system. The result is that the firmest and most enduring constitutions, the finest modelled forms, and limbs of most nerve and power, must be sought for among an agricultural population. There too, you will find the greenest old age, the most uniform health, the most unaffected and constant cheerfulness and content, as well as the most frequent instances of longevity. Each of the professions and almost all other occupations and pursuits either give an undue exercise to *some muscles*, while they leave others dormant, or else the individuals engaged in them are confined in unwholesome air; either of which is sufficient to lay a foundation for disease and premature old age. If proof were demanded I would refer you to the fact, that while one in forty dies annually in our most healthful cities and manufacturing villages, not more than one in sixty five or seventy die annually in the most healthful agricultural districts.

Agriculture, beyond doubt, is pre-eminently conducive to health, robustness, vigor, energy, cheerfulness and longevity. "But what," you may ask, "has all this to do with the subject—with moral development?" I answer, no one will ask this question who

has suffered years of misery from a deranged system, from feeble nerves—or from any other of the ills incident to sedentary habits, either in the study, at the merchant's desk, on the work bench, or from the unhealthy air and deafening din of a factory. Such will instantly recall their own experience, and by it will be convinced that a healthful mind cannot exist in a diseased body; that a mind brave as Cæsar's, must be united to a body as robust and enduring as was Cæsar's; else when the spirit begins to burn and brace up itself to brave danger, it will find the flesh cowardly. Courage, fortitude, decision and energy are incompatible with, and never exist in perfection except in minds united with bodies fully, harmoniously and healthfully developed.

Moreover, agriculture is not only pre-eminently favorable to moral development by training for the mind a body thoroughly adapted to all its wants, ready to second and execute all its purposes, and capable also of enduring its most powerful and long continued efforts; it is also pre-eminently favorable, by presenting to the mind an endless variety of topics of thought and objects for examination. The agriculturist has to do with nature in all her variety of productions, in all her diversities of soil, in all her processes of vegetation. The atmosphere with all its changes, the seasons in all their alternations, are constantly soliciting his attention. His companions in the field, are the gay songsters revelling in all the luxuriance of life and joy. He is constantly associated with nature in all her richness of beauty, loveliness, purity, majesty and cheerfulness; he has therefore the best opportunity for studying nature in all her processes and in all her productions both animal and vegetable; not in books which often are but mutilated copies or bad translations, but in the original. He stands at the fountain—at the spring-head, and drinks, or may drink the waters of knowledge fresh bubbling from their hidden source. He lives and moves and breathes, not among the images and creations of poetry, but in the sacred temple where the realities are enshrined, of which poetry in its sublimest, sweetest, most melting, or most spirit-stirring numbers is only a poor description—a temple whose lofty arch is filled with the wonders and lighted up with the glories of its author, and whose apartments are all filled with the stores of his goodness and his love.

And moreover, the agriculturist has inducements greater than any other can have, to listen to and ponder the instructions which nature presents to every sense, to awaken indeed every sense to drink in her beautiful, melodious, odoriferous and palatable, and not less useful than palatable, instructions. His interest demands it, his success demands it, his happiness demands it. He cannot be an adept either in the art or science of agriculture without it. That, which curiosity or amusement prompts others to examine, profit requires him thoroughly to investigate, and what is not less favorable, his subjects can never be exhausted. Every repeated investigation presents some new wonder. On the other hand, the mechanic, the machinist, the manufacturer, the merchant, are confined by their employment to a comparatively few objects—the properties, parts and powers of which, as far as his employment demands, are soon learned, and the principal effort which the mind is afterward required to make, is the acquisition of skill in execution.

Further, agriculture is pre-eminently favorable to moral development, because it presents fewer temptations than perhaps any other employment. It is said that "every trade has its cheat," and it was a maxim esteemed by the ancients worthy of recording for posterity, that "between buying and selling there sticketh iniquity"—certain it is that there is room for temptation to enter. Agriculture on the other hand does all that can be done to keep the door closed by which temptation enters—it removes the individual from the thronged streets and the haunts of the idle and vicious, and keeps him constantly employed—away

from scenes unfavorable to virtue. Still more, nature is perfectly honest and faithful in all her processes, and he who holds daily communion with her cannot but imbibe her spirit. The vending of the products of agriculture, as well as their cultivation, does not admit of much deception. The articles cannot be made to speak more than the truth, so that the agriculturist is obliged to form the habit of honesty and fair dealing.

Agriculture is also the parent and nurturer of patriotism; not that patriotism which vaunteth itself, while it all the while seeks its own, but that patriotism which leaves the plough midway the furrow, seizes the sword and flies without stopping to change its dress, to the point invaded, and which brings up the rear of the slowly retreating still fighting band, as it reluctantly leaves in the hands of the enemy the battle kill covered with the slain. Or rather, that patriotism which identifies its interest with its country, obeys its call, *rais*s, as well as commands its arms—plans as well as executes, without reward—delivers its country, raises it to independence, and then, when a crown is within its grasp, spurns it and retires again to the peaceful and pure pursuits of agriculture, as the acme of earthly desire.

We do not mean to say that patriots are not to be found among all classes and engaged in every pursuit. The history of our country proves that patriotism is peculiar to no class and no profession, but we do say, that it is agriculture's legitimate offspring. Agriculture attaches the individual to the soil, locates him, makes him feel that his own interests are indissolubly united with the interests of his country for his property is an integral part of the country. He cannot, as does the merchant, go from city to city, where gain happens to invite, stay so long as profit dictates and flee the moment danger lowers. He is the owner, and he well knows that when the emergency comes, he must be the defender of the soil. His feelings; sentiments, purposes and plans from childhood are formed and fashioned on this supposition; his labors in the field give him the muscular ability, his interest, when all nobler principles fail, give him the inclination and the requisite courage. It will ever be true, that agriculturists are the natural safeguard and defenders of a country, and though they may not be the first "to *scot* the approach of tyranny in every tainted breeze," they will be the first to defend and the last to relinquish their rights, their immunities, and what plain sense dictates to be their country's weal. Like the sated lion in repose, not easily roused, but when aroused, they are like the same lion, when he leapeeth from the jungle and roareth upon his prey. Thus did their enemies find them on the plains of Lexington and on the heights of Charlestown. *These were farmers' battles.*

I might go on to show that agriculture is eminently calculated to nurture all their moral virtues in their genuine simplicity and sincerity, and though it does not give that artificial refinement and grace to manners called politeness, it gives what is more valuable, an open, manly, generous sincerity of manners.

The agricultural arrangements of New England have done more than most are aware towards forming that inexplicable and unique character, which distinguishes New Englandmen and their descendants from all others of the human family, and makes them to foreigners a riddle not easily solved. The bearing of a New England agriculturist is not that of a southern planter, formed by commanding slaves; nor that of the English landholder, formed by "grinding the faces," and receiving the supplications of a dependent tenantry. Nor does the New England day-laborer exhibit any thing of the obsequiousness and servility of spirit manifested by the slave or the tenant. The New England character and spirit were formed, by being both the owner and tiller of the soil: a character which is the result of feeling that the individual is an *equal among equals*, combining in it necessarily all the elements of liberty and self-government.

* Calvin Tilden, Esq. of Hanson.

The agriculturists of a country constitute the parts and parcels of its constitution; not that constitution which is written on parchment, which the winds may blow away, or the fire consume, but that which is before all others, and by which all others consist, and which held the State firm in the hour when charters were abolished and laws were no more. I say agriculturists, for as they feed the body politic and constitute its natural defenders, so their condition gives tone and form to its government. Answer me one question respecting any country, and you answer all others respecting the real nature of the government and the condition of the governed. Who owns the soil? does the sovereign, or is it subject to his direct control? Then the government is a despotism, and the people are slaves. Is the soil owned by the *few* and cultivated by the *many*? The government is an aristocracy; the people have *many* to tyrannize over them. Is the land owned in common? The nation has not emerged from barbarism. Is it parcelled out, as our forefathers parcelled out New England; each family owning the farm it cultivates? The government is essentially a popular government; the people have all the essentials of freedom.—The French laid the corner stone on which the temple of liberty will ultimately rise, not when they altered their constitution and form of government, not when the guillotine became a fountain from which flowed a river of blood, not when they laid the neck of their generous but weak monarch on the block, and chiselled from the Tuilleries the insignia and inscriptions of royalty and proclaimed France a republic, nor yet when they shut the temples of religion in which the ministers of abomination had long ministered and tyrannized, nor yet even when they aimed a bolder stroke and exiled their nobles and nobility from their shores. All these, by a *vote* may be banished, and by a *vote* be restored. They laid it in the hour when the peasantry were declared citizens, when the extensive domains of the king and the exiled nobles were confiscated, cut up into small plantations and sold, so that multitudes who were only tillers, became in addition owners of the soil. A misnamed holy alliance restored the Bourbons, reinstated the nobles, and placed the Jesuits in all the departments of religion, and abolished all that could be abolished of the revolution. One thing alone remained—the soil had changed hands, the manors had become farms, fields, vineyards and hamlets of cottages. Power could compel France to pay for, but found it impossible to restore to the nobility their ancient domains and their tenantry. Henceforth France may have kings, but henceforth there will be no *subjects* there; and I venture to predict that no revolution can make the other nations of Europe free, but one that shall upturn the foundations of its society, that shall make its tenantry citizens, and that shall wrest from the king, the nobles and the ecclesiastics, their domains, and perdit the tiller to become identical with the owner of the soil.

All other measures will be but quack prescriptions for the symptoms, instead of specifics for the disease.

On this subject a volume of deep interest and full of instruction might be written, but those of you who have reflected upon it, need no other proof to convince you that the agricultural arrangements of the non-slave holding states, are the permanent constitution of our country, the charter of our liberties; that which will give tone and shape to our government through all coming time. Yes, as long as these arrangements shall remain unimpaired in the non-slave holding states, (the owner and tiller of the soil being the same,) their sons will sit as now, each under "*his own vine and his own fig-tree*," having none to molest or make afraid," simply because it is his own; and in them, in the end, will you find agriculture attaining its highest point of perfection, and pursued with most profit to the cultivator and the community. Egypt was the granary and Palestine the glory of the world only when cultivated by the owners of the soil.

Thus I have attempted to show that agriculture stands pre-eminent among human pursuits, not only because it is indispensable to individual subsistence and national prosperity, but because also it is pre-eminently conducive to the welfare of those who are engaged in it—it gives harmonious and healthful development to the body; energy, courage, firmness and manliness to the mind; is peculiarly favorable to the formation of virtuous and temperate habits, to the acquisition of knowledge, to the growth of that peculiar property called common sense, to purity and integrity of character. These properties are the foundation and pillars of self-government and rational liberty.

I pass on to notice, briefly, the fact that agriculture is a progressive art and science, and also to notice some points where further improvement may be made, and is needed.

That agriculture is a progressive art and science, is evident to all who have attended to its history, or to the improvements which every year brings along with it, and although some remain, whom neither example nor argument can convince, that the implements of agriculture used and the modes pursued by their grandfathers were not perfect, their number is fast diminishing.—When Lamach, with that inexplicable tide of emotions, known only to a father's heart, embraced his infant first born, having surveyed him with that anxious eye which would fain read in his countenance the initials of his future history, he exclaimed, "Noah, comfort, this same shall comfort us concerning our work and toil of our hands because of the ground which the Lord hath cursed," he saw, or thought he saw in him, a genius for agricultural improvement. From some notices in his history, it is probable that the parent's anticipations were realized, that Noah did greatly improve the agriculture of his age, as we find him planting a vineyard immediately after leaving the ark; and we know also that the plains of Shinar, where he is supposed to have resided, became highly cultivated before his death.—With feelings similar to those of the patriarch would the father of Sir John Sinclair have embraced his infant son, could he have foreseen all the blessings which that son was instrumental in conferring upon agriculturists. His indefatigable efforts resulted in the establishment of the British Board of Agriculture, the first and parent of agricultural associations—"an institution whose services," says an English writer, "cannot be too highly appreciated." It caused farmers residing in different parts of the kingdom to become acquainted with each other, and with the plans and modes of culture adopted by each—caused a rapid dissemination of knowledge among the whole profession—brought the art of agriculture into fashion—amended old practices and introduced new ones—and called forth a degree of effort hitherto unexampled in this island. The impulse given to agriculture in Great Britain by that institution extended across the Atlantic. Some of the sons of America had been there—had employed their native inquisitiveness, and alive to every thing with which profit is connected they transplanted into our own soil a scion from the vine which clustered so thickly with blessings. The formation of agricultural societies in America, has been attended with advantages and results as great if not superior to those in Great Britain. Their publications have extensively circulated important information respecting the best implements, the best modes, and the best products of agriculture.—Their premiums have set in operation the inventive genius of their countrymen, and greatly improved the instruments of agriculture.—Their experiments have convinced the community that agriculture is a progressive, a great, and difficult art.—Something also has been done towards convincing the community that it is also a science as well as an art; and that it is only by calling science to its aid, that it can ever hope to arrive at any thing like perfection, or receive any great improvement, or be reduced to general rules. The application of science to agriculture is a modern

improvement. Ancient agriculturists, both practical and theoretical, were ignorant of those sciences which have a direct bearing upon agriculture, viz. geology, mineralogy, chemistry, botany, and vegetable physiology, or the analysis of plants, and a careful observation of their various natural localities and habitades. All these have a direct bearing upon the art of agriculture, and must be thoroughly understood before the art can be perfected. Until the time shall come when legislatures, or wealthy individuals of enlarged views shall endow seminaries connected with farms, where agriculture shall be taught, both as a science and an art, (which is at this moment the great improvement demanded,) we must look to agricultural societies and scientific and independent agriculturists to call forth and supply this knowledge. We must look to them not only to collect it in masses, but to break it up into morsels and distribute it among the people and illustrate its application by their example.

Agriculture is a progressive art and science, and although its friends may well felicitate themselves that through their instrumentality, its progress for some years past has been so much accelerated, that so many improvements have been introduced, that the art begins in our own country to take among human pursuits the high rank it ever ought to hold, still, let us ever remember the field of improvement has but just been entered upon. A boundless prairie lies before us—its soil is deep and fertile, and will richly reward those individuals or that generation which shall have the enterprise and industry to explore and cultivate it. The implements of agriculture, comparatively excellent as they are, are still susceptible of great improvement. Much remains to be done, before the best breed of animals, the best varieties of vegetables, and the most profitable kinds of grains and grasses shall be universally introduced. From experiments which I have made for the last ten years, on at least thirty varieties of the potato, I am satisfied that every farmer may keep his table well supplied from his own farm with this most valuable of roots, of as good quality and in as great perfection as any the Emerald Isle can produce, without materially increasing the expenses of production. I might make a similar remark respecting fruit trees and the various vines and vegetables of horticulture. The improvement, however, most needed, and one, which if supplied would do much to secure all others, is a place or places where agriculture will be thoroughly taught as a science and an art; where some at least from every town may obtain a *thorough agricultural education*, and become not only channels through which information shall flow, but who shall have all the power of example over their fellow townsmen.

The impression that rests on my own mind is, that we have entered but the outer court of nature's temple; that apartments of surprising splendor remain to reward our research—that science is the only guide that can lead us through and lay open to our view all its sacred recesses. I would say to this society, and all similar institutions, go on and abound in your patriotic labors—raise, if possible, to the highest elevation, the agriculture of your country. Clothe her hills with richest verdure, and make her valleys rejoice, and let the bleating of the flocks mingle in harmony with the murmuring of the rills, and the roaring of the water falls, and the busy hum that comes floating on the breeze from the crowded streets of our cities and villages. It is the true "American system"—the foundation of our prosperity, our liberties, and our government. I pretend not to a prophet's ken, but if I mistake not, the demon of discord and misrule must first subvert the agricultural arrangements of our country, degrade and vitiate its agriculturists, before it can lay the glory of America in the dust. To them, under God, is committed the salvation or destruction of our republic. With their good swords they won it, and by them, when all other means fail, it must be defended, or go down to mingle its dust with the relics of ancient republics. Let us

all remember that the day of harvest is coming, when we shall all reap for good or ill, what in this seed time of our being we have sown—and let us sow only the good seed of honesty, truth, integrity, uprightness and propriety, towards Him who alone can bless our labors, save our country, and prepare our spirits to return to, and mingle again with the bright effulgence of his love, whence they flowed.

(From the Maine Farmer.)

ON THE CULTURE OF POTATOES, &c.

MR. HOLMES:

Wayne, Feb. 1833.

Much has been said and written on the culture of the potato, and several pieces have appeared in your useful paper. I hope, however, not to be thought arrogant if I conclude the subject, not quite exhausted. For years past, I have observed in my fields of potatoes some to come up with a large and thifty stalk or shoots, and others that were small and feeble, and all in the same hill; and when dug, I found as much difference in the potatoes as in the tops, which caused me to bestow some thought on the subject, and I concluded it could not be in the soil, but in the seed. In order to bring the subject to the test, as well as I knew how, I took a parcel of potatoes, all of one sort, the last spring, cut off the seed ends (enough for two rows; the other part of the potato I cut sufficient for two rows more, and planted them side by side, and at the same time; those from the seed end had (as might be supposed) the greatest number of shoots, but much smaller and less vigorous and continued so till harvest. Those from the stem ends produced the largest, fairest, and most in measure, but not the most in number. Fair, good sized potatoes should always be selected for seed, and if the seed end be avoided, I think it the better. As to the best soil for good table potatoes I have no hesitation in saying, that good light, loamy land is the best; a moist, strong soil may, and doubtless will produce the most in quantity. Fresh or green stable manure should never be put into the hill, if used at all, it should be spread and ploughed or harrowed in.

Let it always be remembered, that all kinds of potatoes should be planted early enough to get fully ripe, or you cannot have a good potato. It is of almost as much consequence that a potato should get ripe as any other vegetable. The mode of planting, which I formerly practised was in rows of equal distances and at right angles; say about three feet asunder; which mode was a great loss of ground. My practice for several years last past, has been to plant in straight rows one way about a yard distant, and as nigh the other way as I could with convenience from the hills, by which means I have obtained about a third more on a given quantity of ground. As I intended to write only a few lines, when I began, it is time to hasten to some other observations which I have no recollection of seeing in any publication; I mean the preservation of the potato after it is grown. Potatoes should always remain in the ground as long as possible without being injured by the fall frosts. Many farmers dig their potatoes as soon as the tops are dead, presuming they will grow no more, but the contrary has been sufficiently proved; but if the potatoes do not gain in quantity, they certainly will not lose in quality as they would if dug early. If you wish to spoil good potatoes, give them as much light and air as possible, and you will not be disappointed. If you wish to keep your potatoes sweet and mealy, seclude them as much as possible from both light and air. It is the practice of some farmers to dig a hole in the ground and there deposit as many potatoes as they think they shall want during the next spring and summer; they take them out in spring and find them as good and mealy as they were in the fall. To keep potatoes well, select a corner of your cellar for a bin, board it up on both sides of the studs and fill the space with earth; then cover the top with a layer of green hemlock boughs, see that your cellar win-

dows are shut as soon as you begin to deposit your potatoes, in order to prevent a circulation of air, as much as possible. As much depends on the preservation of potatoes, after they are harvested and in cooking, in order to have good mealy ones, as there is in the seed and culture both put together.

Ladies, as I have been addressing your husbands, it would be a great want of decorum in me to neglect you; therefore, I say, if your husbands furnish you with good potatoes, either by culture or purchase, do not spoil them in cooking. Do you ask how this can be avoided? I answer, never put your potatoes into cold water, but boiling, and keep it boiling until the potatoes are done, or sufficiently boiled; then pour the water off as soon as possible; if a little salt be thrown into the water when boiling, the better.

YEOMAN.

(From the Kennebec Farmer.)

MANNER OF APPLYING MANURE, PLOUGHING, PLANTING, &c.

MR. HOLMES:

Wayne, Feb. 16, 1833.

Sir,—Will you or some other gentleman through the medium of your paper, answer the following questions designed for the benefit of the farmer generally, and which may be the means of sitting at rest various opinions existing thereon.

First. Will manure cause as rapid vegetation, when spread and ploughed in, as when mixed with the soil by harrowing only?

Second. Is it necessary that the old turf be disturbed (provided the furrows lay flat and even,) in cross ploughing?

Third. When furrowing for the hills for corn, should these furrows be deep, or shallow.

Fourth. Should the hills be nearer than, or equal distant with the rows; and in planting potatoes, should the same rules be adopted, exclusively of the manner of manuring the hills?

Fifth. Should the seed of the potato be over or beneath the manure? I have about four acres of ground to plant with corn and potatoes, with a good portion of manure yet to be put upon it; and I wish to understand what method I shall take that will be most advantageous. And I wish to have your opinion as well as others, concerning the ploughing of ground; whether it would not be far better in the end, considering all expenses in so doing, to have every stone removed that shall obstruct the plough previous to ploughing? Some one may say if the gentleman who advances these ideas had some of our rugged farms to deal with he would at once resign his opinion; very true. I admit there are some farms that have but few acres, that might be thus subdued; but with a half acre thus managed, they would acquire more net profit, than with twice the quantity managed in the common way. Some may doubt it. Gentlemen, try for yourselves, and you will have the pleasure of seeing little grass in your cornfields, and in years following, of trudging after your ploughs without seeing the nose from morning till night. The soil would in time become cheaper and therefore would not bind out in half the time. Let reason's perfect balance weigh the whole. Yours, &c. A YOUNG FARMER.

REMARKS BY THE EDITOR.—I. In answer to this question, we think it must depend upon the state of the manure used, and the depth which you cover it by the plough. If the manure has not undergone any fermentation, and it be covered to a moderate depth, when the fermentation commences,—there is a genial warmth kept up during the process or during the first stages of it. This warmth promotes vegetation, but if the manure has been fermented and decomposed before it is applied, vegetation will not be particularly hastened by it; to be sure, it will be promoted because the manure will yield a good supply of food to the plant. On the other hand, if green unfermented manure be buried deeply, the process of fermentation will be proportionally delayed, and consequently any

assistance it can be to hasten vegetation must be small. It will however come into operation later in the season, and be of great benefit to the crop in the latter stages of growth.

2. No, sir. If your turf is well covered, let it lie and ferment; if you turn it back to the surface, more than half of it will dry up, or if it ferments at all, the useful gaseous particles will fly off into the atmosphere, instead of being detained and incorporated with the soil. There can be no profit in manuring the atmosphere,—unless it be to the doctors.

3. Not so deep that the influence of the sun cannot reach the seed and cause it to germinate, nor so shallow that the rains will wash it out, or sun dry it up.

3. Nearer;—but have your rows so situated, and sufficiently distant, to let in a due share of sunshine, as that is an important item in a cornfield. Be sure also that your land is rich enough to support what you put on.

5. We had rather have the manure mixed intimately with the soil, but if it must be put into the hole, we should prefer, as a general rule, to place it below the seed, because, in order to do any good, the manure must decompose or rot. If it does this, there must be given out some gaseous particles; these being lighter than the surrounding matter, have a tendency to rise, and if they rise they will pass through the soil in which the seed is placed, and perhaps come in contact with the roots and fibres of the plant, and stand a chance to become absorbed by them.*

In regard to the query, what management will be most advantageous in regard to his corn crops; we will state one which was suggested to us by a faithful young man, whom we have employed for some years, and which has never failed. The land is a sandy loam,—of good texture, and free from stone. Forty or fifty loads to the acre of common "barn manure," as it is called, is put on and ploughed in deeply. A good coating of unfermented horse dung is then put on, and either harrowed in or covered lightly with the plough. The corn is then manured in the hole with hog manure, and covered a suitable depth. We have not failed of having a good crop since adopting this plan. Our reasons for it are these, viz. The springs in this state are apt to be chilly, and Indian corn requires something to bring it forward. The hog manure being easily decomposed, commences putrefying, and furnishes a warm bed for the corn to germinate in. The horse manure being buried a little deeper, commences putrefying a little later, and continues the warmth; and lastly, toward the close of the season the coarse manure which had been buried deeply "follows suit," and the roots extending down into it, receive the benefit of it at a time when the seed is filling and ripening, and the plant needs a good store of sustenance and support.

In regard to moving stones, we would move every one that was large enough to put into a wall. The space which it takes up to say nothing of the trouble it occasions, would support more or less spires of grass, and spires of grass make tons, you know. Small stones however, if not too numerous, buried in the soil are beneficial to preserve moisture, &c.

NEW ZEALAND SPINACH.—New Zealand Spinach produces fine pot greens in abundance; and the objection to its culture arises from its coming late in the season. This may in a measure be remedied by starting the plants in a hot bed. Twenty plants will afford a daily supply for a family. Near the south of England we are told it has become quite a weed; wherever it is once sown plants rise spontaneously.

B.

*Experiments however have not fully confirmed this theory. Mr. Jesse Putman in stating his method of raising potatoes to the committee of the Essex Co. Ag. Society, says—"with regard to placing the potatoes upon or under the manure, I could see no difference in the yield."

(From the New England Farmer.)

MANGEL WURZEL, OR FIELD BEET.

The species of beet called mangel wurzel is probably one of the best, if not absolutely the most valuable root for field cultivation which modern husbandry has applied to the feeding of cattle. Among its reputed excellences are numbered that of its being a very sure crop, as the plant will endure the driest weather with less injury than most plants, its affording not only a greater quantity of produce, but more nourishment in proportion to its weight than any known root, excepting the potato, and some other varieties of the beet, which do not grow so large nor yield so much to the acre.

The field beet is sometimes called the root of scarcity, but Loudon says it is incorrect to give it that name. "It is supposed by Professor Thaer, to be a mongrel between the red and white beet. It has a much larger bulb than either, and that bulb, in some varieties, grows in great part above ground. It has been a good deal cultivated in Germany and Switzerland, both for its leaves and roots; the leaves are either used as spinach or given to cattle; and the roots are either given to cattle, used in distillation, or for extracting sugar. The variety preferred in Germany is one slightly tinged with red for cattle, and the pale yellow variety for the distillery and sugar manufacture. The seed must not exceed a year old, and great care should be taken that the seed of the common red and white beet are not mixed with it.—The seed of every variety of beet is very apt to degenerate."

SOIL.—The soil in which this root thrives best is a deep, rich loam, inclining to clay. The more the land is manured and cultivated, the better the plants. The soil should be made fine to a good depth.

QUANTITY OF SEED, AND ITS PREPARATION FOR SOWING.—The quantity of seed, according to English writers, is four pounds to an acre. This is said to be rather a large allowance. Some cultivators recommend to prepare the seed for sowing by soaking it for six hours in soft water. This may not be necessary except the land is very dry, at the time of sowing.

TIME AND MANNER OF SOWING.—For field crops the following methods and times have been adopted by successful cultivators. Mr. Gideon Foster in giving an account of his premium crop, raised 1830, says, "Early in May there was spread on an acre of ground about eight cords of compost manure, and ploughed in to the depth of eight inches, and harrowed in the usual way. About the 12th of May, I sowed the seed in rows by hand twenty two inches apart."

A writer with the signature E. D. A. who dates from Southbridge, Conn. in giving an account of a crop of mangel wurzel, which he raised in 1829, says, "the ground, one-fourth of an acre, was ploughed three times last spring, once rather deeper than usual, harrowed and rolled, then furrowed three feet apart; but it ought to have been but two; and about ten loads of compost manure put in the furrow, which was composed of about equal parts of argillaceous [clayey] cleanings of ditches, barnyard and barn window dung, heaped and fermented together. The manure was then covered by ploughing back furrows on the same, leaving the land in high ridges. I then passed a heavy ox roller over the ridges cross-wise, which laid them in gentle swells, and compressed the soil and manure together. (The roller can hardly be dispensed with if you wish your soil reduced to fine tilth, and you cannot reasonably expect to succeed without.) About the 12th of May the land was planted in the following manner—first a wheel made to fit the place of a common wheelbarrow wheel, with pegs, in its circumference about 2½ inches long was run upon the ridges, making holes about four inches apart; and one capsule or berry was dropped in each, and the earth pressed upon them. At the second hoeing, the plants were thinned, and left about eight inches apart in the rows, and were hoed but once afterwards."

SUGAR BEET.—A writer for the New England Farmer, with the signature E. B. whose communication is dated Concord, Mass. Jan. 23, 1830, prefers the sugar beet to the genuine mangel wurzel, and recommends it as "affording a bountiful crop of large sound roots, which, if not so large as the mangel wurzel, I think are heavier, and will keep better. Their use as food by my cows has produced a decided improvement in the quality of their milk, which has been perceptible to all my family, in two days after I began to feed them out to my cows."

John Prince, Esq. of Roxbury, has had much experience in cultivating both the mangel wurzel and sugar beet, and we believe prefers the latter. Its crop is not so bulky, but is not only sweeter and more nutritive but may be preserved with more facility from decay or deterioration.

NEW SPECIES OF POTATO.

The English papers give the following account of a new kind of potato, or a substitute therefor.

"The *Oxalis Crenata* has lately been introduced into this country from South America, and is likely to be extensively cultivated as decidedly preferable to the common potato. A root was brought over, in 1830, by Mr. David Douglas, and planted by Mr. Lambert; and a few small tubers were exhibited to the Linnæan society. One of these was planted by Mrs. Hirst in the garden of Great Koper's Hall, near Brentwood, and has succeeded remarkably well. It was first put into a small pot in the end of April, and in the month of May the pot was placed in the flower garden and broken, and the parts removed. This precaution appears to have been unnecessary, for it has stood the frost remarkably well, and on the 5th of this month, when it was dug up, the leaves were green. The root planted was about half an ounce in weight, and the roots produced were about ninety in number, in a space not exceeding nine inches in diameter and six inches deep. The aggregate weight was upwards of four pounds. A few of the roots were boiled, and when eaten, were found to resemble the potato, but were unanimously admitted by all the party to have a more agreeable flavor. Such a result is very promising, and when we consider that the common potato (*Solanum tuberosum*) was, for a hundred years confined to gardens, and that its roots were for a long time not larger than beans, and were watery, we may reasonably expect that cultivation may do much to enlarge the size of the roots of the *oxalis*, and perhaps improve the flavor beyond what it is at present. It has a fine yellow flower, and is ornamental in the garden. The time of flowering is August. The stems were numerous, large and diffuse; the flowers, slightly notched; hence the epithet *crenata*. At present, the tubers somewhat resemble small kidney potatoes, inclining, however, to grow in an aggregate form."

POTATOES.—A correspondent of the Farmer's Magazine, says he has raised, the last two years, two good crops of the kidney potato on the same ground. In taking up the first crop he buries the tops, or herbage, in the trench by turning the earth between the rows upon them, and this done the ground is ready to be planted again. My first crop last year was planted on the 30th of March, and my second on the 12th of July, the second has been as good as the first, and the potatoes are perfectly ripened; the joint produce of the two crops has been fully at the rate of 960 bushels an acre. I took some of the potatoes of the second crop, of nearly the full size, to market on September the 15th.

POTATO PASTE.—Mash boiled potatoes very fine, and while they are warm add a sufficient quantity of butter and make them boil together; then before the paste gets cold flour the board to prevent it from sticking, and roll it to the thickness wanted.—*Farmer's Reporter.*

HORTICULTURE.

(From the Library of Agricultural and Horticultural Knowledge.)

PLANTING GROUND TO THE GREATEST ADVANTAGE.

A correspondent (Mr. Howden we believe) in the 17th number of the *Gardener's Magazine*, thus describes a very ingenious "plan for planting a piece of ground to the greatest advantage." In the winter of 1814-15, on account of some alterations of roads, plantations, &c. a piece of land dropped into my hands, of an awkward shape for tillage, and rather too small for pasture; I therefore concluded to introduce a little spade husbandry; as the house was pretty near to the farmyard, the intercourse or advantages betwixt them would be reciprocal. Accordingly, having no gardeners, I set farm laborers to make so many ditches, four feet wide, and two feet deep, at every twelve yards, clear across the whole, the turf and good soil were thrown on one side, and the bad soil on the other. The laborers wondered what such ditches could mean, as they were as wide at bottom as at top, and particularly, when I ordered them to be filled up a foot thick with fresh farmyard manure; and the turf, and what little good soil there was, chopped and thrown on the top of the dung. I had prepared a compost of turf and dung the year before, which was laid upon the whole, about nine inches thick, in which I planted fruit trees in the following order:—at every six feet, in the centre of what I now call a border, was planted a standard, then a gooseberry, then a currant, then a dwarf, then a currant, then a gooseberry, then a standard, &c. I was not so particular as some are in my choice of fruit trees; I gave my nurseryman a kind of roving commission, to send me a couple of each of such as he could recommend, then added two, four, six or eight of such as I could recommend myself. On the edges of the borders I planted rows of strawberry plants, six inches apart, which I have only renewed about twice in ten years; the fruit is always excellent, and supplies a large family all the strawberry season, which saves much garden ground for that crop. The space betwixt the borders, I cultivated at my leisure; some were appropriated for nursery ground, some for potatoes, peas, cabbages, &c.; some for experimental agriculture, lucerne, mangold wurzel, &c. The orchard has succeeded beyond my utmost expectations. I had forty-eight apples from two Keswick Codlins the first year, but have never had patience to count them since: last year I had at least seven bushels off the same two trees! Six dwarf Hawthornens produced above fifteen bushels, and I have, at this moment, two bushels of Wyker pippins from one graft of my own putting in, only ten years ago. Two Dumelow's seedlings, planted twelve years ago, produced at least eight bushels of beautiful fruit, scarcely one of them less than ten inches round, and many of them twelve. The Nonpareils are a very similar crop; as for the Mank's apple, &c. there are generally as many apples as leaves; and when in blossom they seem an entire bunch of flowers.

(From the Genesec Farmer.)

CURCULIO, LIVE HEDGES, &c.

Greatfield, 2 mo. 18, 1833.

D. LONGSTRETH says that a gage plum tree which stood over a pavement, ripened its fruit in perfection the last season, while all the fruit of his other trees of that kind, which were not over pavements, was destroyed by the curculio. In order to show that this result was caused by the pavement he says that a plum tree, standing near the path to the barn, not paved but which was frequented almost hourly, lost all its fruit. Such facts ought to be recorded and generally known.

His account of the thorn hedges near Philadelphia, is discouraging. The destruction of the English

thorn, many years ago on Long Island, had deterred some cultivators from employing *exotics* for hedges; but no danger was apprehended of the decline of American species. It is found however, that many hedges of the Washington or Potomac thorn (*Crataegus cordata*) have latterly become so much infested and damaged by insects, that little hope is entertained of their recovery. A farmer of Abington in Montgomery county, Pa. has expended more than \$100 in the purchase of these thorns; and he now considers his money and labor both lost.

According to Dr. MEASE, the New Castle thorn is another species (*Crataegus crus galli*). The late Judge PETERS says, "In the summer of 1812 I visited the garden and shrubberies of Mr. McMahon. Most of his thorn plants were leafless. The New Castle thorn was an exception. I never beheld a more verdant, vigorous plant. The contrast with other thorns was striking and captivating. He, with reason, prefers it on every account. It has every valuable attribute of other thorns. It superadds the capacity of resisting the maladies, and thriving amid the misfortunes to which others are subject."

Will any correspondent oblige me by continuing his examinations so far as to determine whether the New Castle thorn is still exempt from the maladies to which others are subject. D. T.

RURAL ECONOMY.

(From the New York Farmer.)

COTSWOLD AND OTHER VARIETIES OF SHEEP.

MR. LEBER.

In your last number are some queries, by a subscriber, respecting Cotswold sheep, which would be answered differently by different persons; but let each person who knows them contribute his mite. There are in various parts of England high rolling lands called wolds, as in Yorkshire, Lincolnshire, Gloucestershire. The last are called the Cotswold hills, from an old practice of cutting or housing sheep, but this practice is now out of date. Cotswold sheep are long-wooled, large, and strong built, have white faces and legs, broad noses, and are without horns. They have some Leicester blood in them, from which all the long-wooled breeds in England have received great benefit. They are, however, a coarser and heavier kind of sheep than the Leicester.

A few years ago, being amongst the farmers there, I found that large lots of Cotswold wethers, four tons or thereabouts, might be had which would weigh on an average fifty-six pounds per quarter. I there saw them in the butchers' shops, at Gloucester, of full that weight, and close to them were hanging carcasses of the beautiful little Ryeland sheep, weighing only fourteen or sixteen pounds per quarter, but worth more per pound. In the market were tups for sale, large good sheep; their length struck the eye directly. A Mr. Large, of Bodwell, Oxfordshire, on the border of Gloucestershire, gained many prizes at the Southfield show, for his Cotswold sheep; one of which weighed sixty-two and a half pounds per quarter, or two hundred and fifty pounds the carcass. But now that we no longer find so heavy, two sheep to make the weight are found much better in all respects, and I have seen them lately, at the London Christmas shows, weighing from thirty to thirty-six pounds per quarter.

The remarks of Mr. Smith are slightly incorrect. The land on the Cotswolds is not poor, for if it were so, heavy long-wooled sheep could not live much less get fat on it. The climate is not cold, being in the south of England, but wet and bleak. These sheep never live hard, and in winter you may see thousands of them feeding off turnips on the land, with a stack of hay in the middle of the field, and no shelter but

stone fences, not a tree nor a hedge. They are hardy, good-constituted sheep, but require abundance of moist as well as dry food in winter, or they would rapidly degenerate in wool and carcass.

In the small territory of Great Britain are various breeds of cattle and sheep, adapted to the soils on which they are kept, and nothing strikes an Englishman more than the little variety seen here. The common sheep of the United States are evidently from the same stock as the heath sheep of England, such as may be seen on Bagshot heath, the Derbyshire hills, and other places. These common sheep have in most districts been crossed with merinos, the wool of which ought to be excellent indeed to make up for their ill-formed carcasses. Of late years many Leicesters have been brought from England, and an excellent breed they are, but coming from a mild, moist climate, and rich soil, some of them and their descendants have suffered severely when wintered in the way that is too common here. Some Lincolns and Southdowns have been brought, but there are other good sheep which have never been introduced. The large Dorsets, which, with a kindred breed of Somerset sheep, supply the London market with house lamb, are well worth being imported and tried in some parts of the middle states. The Ryelands are good sheep, but would not suit the many who look to size instead of symmetry. Would it not be worth while for some of the agricultural societies to introduce these, with some of the smaller varieties of British cattle as yet unknown here?

The number of sheep kept in England and Scotland is immense, and at the large sheep fairs, at stated times, in every part of the country, a stranger may see every variety. At Wey, in Hampshire, I have seen one hundred and twenty thousand sheep penned for sale. These were chiefly Hampshire Downs of all ages, assorted in lots, so that a buyer could find ewe lambs in one pen, wether lambs in another, then shearlings, or two-tooths as they call them, &c. Besides these, but not penned, were many flocks of Dorset and Somerset ewes, some of which then, (10th October,) were within a few days of lambing. In England, beef and mutton are nearly the same price, and the latter is a favorite meat. Here it certainly is not so, for though the beef and pork are good, mutton is not so, and the inferior quality accounts for the price. H.

P. S. The price of Cotswold mutton, in England, is like that of all the large long-wooled sheep, less than that of smaller sheep; but even these of late years have been bred there with so much pains, that they fatten earlier than formerly, and, not having age, their mutton has not so much flavor as it used to have. Some gentlemen keep wethers to a good age for their own tables; but the farmer, of course, makes the most profit he can, and sells fat, at two years old, sheep which formerly would have been kept to twice the age.

(From the Genesee Farmer.)

DISEASES OF ANIMALS.

ON THE CAUSE AND PREVENTION OF FOOT-ROT IN SHEEP.

I find an excellent and somewhat lengthy paper upon this subject in the second volume of the *Quarterly Journal of Agriculture*, by Mr. Dick, veterinary surgeon, Edinburgh, of which I have made a brief abstract.

Mr. Dick first describes the structure and functions of the foot, and their adaptation to the habits of the animal, in a state of nature. The sheep is naturally an alpine animal, dwelling, by preference, among the steepest and most inaccessible summits of lofty mountains. Amid these ranges, the hoofs are worn away as they grow, and are consequently always fresh and sound.

"But what, he asks, is the effect of domestication? What do we gain by enticing the sheep from

his native and natural haunts, to the richer pastures of our meadows or our lawns? There the animal enjoys a more luxuriant pasturage; it fattens to a larger size, and will, in this respect, repay the increased allowance which has been made to it. But instead of moving about in small troops, with the alacrity of the wild kinds, the sheep are seen in flocks of thousands moving slowly over their pastures, and gorging themselves to an extent which cuts short the thread of life, by the advancement of various diseases. Instead of wandering from the summit of one peak to another, in quest of a scanty subsistence; or, instead of being compelled to descend from the summits of the mountains in the morning, and ascend again in the evening, they are compelled, in many cases, to remain within a few yards of a particular spot, for weeks together, and there engorge themselves to satiety.

For want of the friction upon hard surfaces the hoof becomes overgrown. "The crest, the part naturally intended to support the weight of the animal, is allowed to grow out of all due bounds, because the softness of the pasturage upon which it now moves, presents little, if any, of that rough friction to which the feet of the animal is naturally intended to be exposed. The crust, therefore, grows unrestrained, until it either lays over the sole, like the loose sole of an old shoe, and seems to retain and accumulate earth and filth, or is broken off in detached parts, in some cases exposing the quick, or opening new pores, into which particles of earth or sand force their way, until reaching the quick, an inflammation is set up, which, in its progress, alters or destroys the whole foot," the system becomes diseased, and the animal dies.

Mr. Dick explodes the idea that the disease is contagious. He thinks it promoted by soft old pastures, luxuriant herbage, and particularly by wet seasons, and wet grounds. To cure the disease, Mr. Dick recommends that the detached hoof be pared away, and some caustic applied to the surface, of which muriate of antimony is the best. To prevent the disease, he recommends that the hoofs be rasped or paired at regular intervals; that the sheep be made to travel upon hard surfaces, or folded in a place purposely prepared, upon which they would move about every day, and wear their hoofs.

The whole of this paper is worthy of the careful perusal of the sheep farmer, and will be found from page 852 to 865 in the work I have quoted. Mr. Dick's paper sufficiently indicates, what other considerations concur in establishing.

1. That sheep are far more healthy when suffered to range upon the sides of precipitous hills and mountains, where they obtain short feed, pure and dry air, stony bottom and plenty of exercise. And

2. That consequently our hilly districts must ultimately be resorted to for the profitable and successful rearing of this valuable animal. B.

(From the New England Farmer.)

DISEASE IN CATTLE.

We have published several communications relative to a disease in cattle sometimes called a *hold fast*, a tumor on the jaw which is believed to be incurable. It did not then occur to us that we had before been favored with an account of a similar, or, probably, same disorder, which we published in the *New England Farmer*, vol. iii. p. 211. As this gives a statement of the common cause of this evil, and other circumstances connected with it, a republication of the substance of the notices referred to may be serviceable to some cultivators, not in possession of the volume which contains them.

E. Hersey Derby, Esq. in a communication dated February 15th, 1825, observes as follows:

Some time in last May I observed a swelling on the side of the face of a valuable ox, and requested several persons to examine it. They called it a hold-fast. I afterwards requested a surgeon to look at it, and

* This thorn is also a native of Cayuga county, N. Y.

advise me what mode to adopt for the relief of the animal. He thought a cure could not be effected except by laying open the part and extracting the tumor, which I considered too hazardous an experiment. A farrier, in this vicinity, supposed it might proceed from some defective teeth;—I allowed him to extract three, directly under the swelling, and to insert a rowel in it: in a few days it discharged copiously, and the animal seemed much relieved;—I flattered myself he would effect a perfect cure.

Some time after the rowel was taken out, the swelling increased very rapidly, and in December I found it necessary to slaughter the animal. I sent the head to Dr. Peabody, desiring him to give me some account of the case. I enclose you his answer.

The following is extracted from Dr. Peabody's observations on the case, in answer to Mr. Derby's request.

There is in each cheek bone of the ox a large irregular cavity, above the range of the teeth, sufficiently capacious to contain half a pint. The external portion of bone, covering this cavity, is about two lines, or two-tenths of an inch in thickness. The internal bones are also thin. This cavity in a healthy state is empty.

The fleshy tumor was over this cavity, which I in the first place, dissected off, and which was as large as a man's two hands placed together. This tumor appeared to have commenced upon the exterior bone of the cavity, and was very firmly and intimately connected with it. It consisted of what we call *schirrous* or indurated flesh, and near the same bone was, perhaps, a gill of pus. The bone itself was considerably absorbed, that is it had lost its consistence as bone, so that I could push my dissecting knife through it. The cavity (which in health was empty,) was filled with a diseased substance, most of which was as hard as *schirrous*, the remaining part was coagulated lymph. If the ox had not been killed, the matter, or pus above mentioned, must have found its way out, and in this instance through the gum, outside of the teeth. And the disease, being so extensive, must have been incurable.

The cause of this disease, I have no doubt, originated in external violence. I believe I suggested this idea to you when I saw the ox alive at your farm. I have conversed with a very intelligent medical gentleman since, who has lived in the country and who has been acquainted with a number of cases, some of which have been traced to external violence. This violence is inflicted by cruel teamsters. The bone, as stated is thin, and a heavy blow with the butt end of a heavy whipstaff is sufficient to fracture it. An accident of this kind will be followed by swelling and infusion into the cavity, which will destroy the texture of the bone, and eventually become an open sore, and be incurable. There are different degrees of the disease according to the degree of violence. In some cases the violence may not fracture the bone; in such cases there may be a temporary swelling, which will subside. Or if the fracture be slight, there may be a spontaneous cure from the efforts of nature. In such cases the appearance of disease will subside in a few weeks, but when the swelling continues or increases, after four or five weeks, I should think the disease may be considered as incurable, and the sooner the animal is killed the better.

Now one word on the cruelty inflicted on these dumb animals. I have seen oxen pounded not only with the butt end of a heavy whip-staff, applied with all the strength of a frantic athletic man, or more properly, *brute*—but I have seen them struck over the face with the handle of a hay-fork nearly two inches in diameter, or with a *handspike*. Such blows produce this disease, and as a proof of it, it never occurs in any other part of the animal. Now would it not be well that a law should be enacted and enforced, regulating the size of whip-staves, and that a teamster using or carrying a whip-staff over a certain size, which should

always be made so small as not to injure the bones of an animal, should be subject to a heavy penalty? It is shocking to humanity to witness the brutal cruelty inflicted upon the noble horse and useful ox, and it calls loudly for some effectual remedy.

BROKEN WIND.—A broken winded horse had been kept in a field where there was not any water except in the bottom of an old blue kiln, and had recovered his wind. The owner ordered a stable shovel full of quick lime to be renewed every five or six days, and the water to be poured off, and a bucket of it given every day to a broken winded coach horse aged eight years, which had almost a constant cough. The horse was supplied with water thus prepared for about five weeks, and kept in the stable. He is now perfectly recovered in his wind, and free from a cough.—*Farmers' Reporter.*

He that hath a trade hath an estate; and he that hath a calling hath a place of profit and honor. A ploughman on his legs is higher than a gentleman on his knees.—*Dr. Franklin.*

MISCELLANEOUS.

(From the Genesee Farmer.)

LIBRARY OF ENTERTAINING KNOWLEDGE—RICE BUNTING.

Greatfield, 1st mo. 19, 1833.

The Library of Entertaining Knowledge is published under the superintendence of the same society as the Library of Useful Knowledge. It is understood that this association includes many of the most eminent men in Great Britain who favor a more general diffusion of knowledge; and Lord Chancellor Brougham is, or has been, chairman of the committee. It is therefore, as we have a right to expect, a work of great merit; and in many instances the researches of naturalists, which have been heretofore confined in volumes beyond the reach of common readers, are lucidly arranged and presented in a popular form, illustrated by numerous figures or engravings. A *number* (bound like many of the French books in paper) contains about 216 pages; and *two numbers* form a neat duodecimo volume. I have just received the 30th *number*, which appears to have been written in the early part of last year, (1832.)

There is internal evidence that much labor has been applied in the preparation of the different articles; but sometimes, through haste or inadvertence, errors have escaped undetected by the publishing committee. Such defects appear indeed to be rare, but they rise in importance with the high character of this work which insures them a widely extended circulation; and it may be some slight assistance to the cause in which that society is engaged, to point out some of those errors, from time to time, in the Genesee Farmer.

THE RICE BUNTING.

Under the head of *RICE* we are presented with the following account of a bird with which we are all familiar, known to some persons by the name of *Rice bunting*, and *Reed bird* from its food, and to others by the name of *Conquella* from its notes.

"The cultivators of Rice in America sometimes suffer severely from the depredations of the *Rice bird* of Catesby, (*Emberiza oryzivora*.) known familiarly in the country by the name of Bob Lincoln. This bird is about six or seven inches long; its head and the under part of its body are black, the upper part is a mixture of black, white, and yellow, and the legs are red. Immense flocks of these birds are seen in the island of Cuba, where the rice crop precedes that of Carolina, but when from the hardening of the grain the rice in that quarter is no longer agreeable to them, they migrate towards the north, and pass over the

sea in such numerous parties as to be sometimes heard in their flight by sailors frequenting that course. These birds appear in Carolina while the rice is yet milky. Their attacks upon the grain while in this state, are so destructive as to bring considerable loss upon the farmers. The birds arrive in the United States very lean, but thrive so well upon their favorite diet, that during the three weeks to which their visit is usually limited, they become excessively fat, so as to fly with difficulty, and when shot to be burst with the fall. So soon as the rice begins to harden here, they retire to other parts, remaining in one place only so long as the rice continues green. When this food entirely fails they have recourse for their subsistence to insects until the maize begins to form its grains, and then the milky substance which these contain is devoured with the same avidity that marks their attacks upon the rice plant."

The brief history of this bird is as follows: It leaves the intertropical regions early in spring; and directing its course slowly through the southern parts of the United States, passes on in great numbers to breed north of the fortieth degree of latitude. At this time the sexes are very distinguishable by their colors. Early in summer however, the color of the male begins to change, gradually assimilating to those of the female; and towards its close, the parents with their broods, joining in large flocks, on their way southward, attack in succession the late sown oat fields of New York and New England, the wild rice along the shores of the Delaware, and the cultivated rice of South Carolina and Georgia. It then passes into Cuba and soon after into Jamaica. See WILSON, AUDUBON, and NUTTALL.

The notion of their passing in autumn from Cuba into Carolina to eat rice was a misconception of CATESBY. Lying in a bay at Andros' Island one night in "September" he heard three successive flocks of birds passing over to the northward; and concluded from their notes that these were ricebirds. He adds: "I conceive after partaking of the earlier crop of rice at Cuba, they travel over sea to Carolina for the same intent, the rice there being at that time fit for them." We have seen however, that the *rice birds* at that very time were journeying southward from the northern parts of the United States; that their favorite kinds of food, with which our country abounds, were already spread before them; and they could have had no inducement to go to Cuba, for the rice harvest in the southern states, "commences at the end of August."

Their *leanness* at this season; and their *subsisting on insects* after the rice is gone and while they are waiting for the maize to form its grains, are equally fictitious; for though the time of planting Indian corn is more extended in the southern states than in higher latitudes, owing to a greater length of the warm season, yet a portion is in the milky state quite soon enough to save Bob Lincoln from any such necessity.

I omit some minor objections, but observe that *the back* of its head is *not black*, though so represented in NUTTALL'S figure. WILSON says, "back of the head a cream color;" AUDUBON, "back of the head and neck, brownish yellow." NUTTALL: "the hind head, yellowish white." It is from this circumstance that it takes one of its local names, the *skunk black bird*.

I would now remark that this paragraph from the Library of Entertaining Knowledge, though very erroneous, affords proof of the research of the author, who only failed by not making a better selection of books. So much has been done for American ornithology in the last twenty-five years, that he who exclusively consults older authors, places himself far in the back ground. D. T.

* Part 29, p. 94. † p. 90.

† In an article copied from the Southern Agriculturist, the writer says, "The corn was in *lasse* from the ninth day of June until the first day of July." American Farmer, Vol. xiii. p. 100.

Prices Current in New York, April 20.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .11 a 13½; Upland, .10 a .12½; Alabama, .10 a .13½. Cotton Baggins, Hemp, yd. .13 a .21½; Flax, .13 a .14½. Flax, American, 7 a 8. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13 00 a —. Flour, N. York, bbl. 5.50 a 5.62; Canal, 6.00 a 6.37; Balt. How'd st. 5.62 a 5.75; Rh'd city mills, 7.00 a —; country, 5 50 a 5.62; Alexandria, 5.56 a 5.62; Fredericksburg, 5.50 a 5.62; Petersburg, 5.62 a —; Rye flour, 3.75 a 4.00; Indian meal, per bbl. 3.75 a 4.00, per lhd. 16.50 a 17.00. Grain, Wheat, North, 1.12 a 1.16; Vir. 1.18 a —; Rye, North, .80 a .82; Corn, Yel. North, .73 a .78; Barley, .60 a .62; Oats, South and North, .45 a .46; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.50 a 10.00; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, 7½ a 9.

ITALIAN SILK REEL FOR SALE.

An Italian Silk Reel, imported from Genoa, for sale. Inquire at the American Farmer Establishment. Letters post paid. Price \$10. This will not be repeated.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life), is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also, — A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire — price \$150.

Also, — A full sister of the last, 3 years old, 41 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

L. I. HITCHCOCK,
Ap. 26 — 49. Amer. Farmer Establishment.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED. Also MAMMOTH PUMPKIN SEED. EARLIEST FRENCH CABBAGE do. EARLY FRENCH, or PARIS WHITE ONION do. ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

L. I. HITCHCOCK.

PUBLIC SALE OF DURHAM SHORTHORNED CATTLE AND HIGHLY IMPROVED SHEEP

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEIFERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5, — St

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals, — viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1½ " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards. — A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenths Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address L. I. HITCHCOCK,
Amer. Far. Office.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at \$1 per bushel.

L. I. HITCHCOCK,
American Farmer Office and Seed Store.

200,000 WHITE MULBERRY TREES.

The Sub-scriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the *Morus Multicaulis*, or Chinese White Mulberry.

ASA BUTLER,
Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12, — 6t.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

SINCLAIR AND MOORES NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices; — after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville.) double Altheas, Honeysuckles, Corcorus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Ailanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Neetarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET. — There is a decline to a trifling extent in the flour market. Sales of Howard street flour have been made within the range of our quotation. From some unknown cause some of our city mills flour has attained the ascendancy over Howard street in South America, and therefore a few sales have been made of it for that market at a considerable advance upon the price of Howard street.

TOBACCO. — Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00. — Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00. — Fine yellow, 18.00 a 25.00. — Virginia, 4.00 a —. — Rappahannock, 3.00 a 4.00. — Kentucky, 3.50 a 8.00. The inspections of the week comprise 726 hhds. Md.; 124 hhds. Ohio; 2 hhds. Ken. and 1 hds. Vir. — total 853 hhds.

Flour — best white wheat family, \$6.75 a 7.25; super Howard-street, 5.25 a 5.37½; city mills, 5.37½ a 5.75; city mills extra 5.50 a —; — CORN MEAL bbl. 3 25; — GRAIN, best red wheat, 1.15 a 1.20; white do — a 1.25; — CORN, white, 67 a 68, yellow, 68 a 70; — RYE, 69 a 71 — OATS, 37½ a 41. — BEANS, 75 a 80 — PEAS, 65 a 70 — CLOVER-SEED 8.00 a — — TIMOTHY, — a — — ORCHARD GRASS 3.00 a — — Tall Meadow Oat Grass 2.00 a 2.50 — Herd's, — a — — Lucerne — a 37½ lb. — BARLEY, — FLAXSEED 10 a 1.62 — COTTON, Va. 10 a 12 — Lou. 12 a 13 — Alab. 12 a 13 — Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½ — WHISKY, hhds. 1st p. 29 —; in bbls. 29½ a 30 — — WOOL, Washed, Prime or Saxony Fleece 43 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 16 Hemp, Russia, ton, \$200 a 210. Country. dew-rotted, 6 a 7e. lb. water-rotted, 7 a 8e. — Feathers, 36½ a 37½ — Plaster Paris, per ton, 5 25 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00. — Prime Beef on the hoof, 5.00 a 6.25 — Oak wood, 3.00 a 3.25; Hickory, 4 50 a 5.00; Pine, 2.25.

CONTENTS OF THIS NUMBER.

Editorial; Letter from Commodore Porter to Mr. Skinner, given an account of the Angora Goat, and the electricity of the Angora Cat — Hawks to frighten Birds; Winship's Nursery — Ploughing in Hot Dry Weather — Invention and Economy — Collapse of the Lungs — Address delivered at Bridgewater, Nov. 7, 1832, before the Plymouth county Agricultural Society, by the Rev. John Bigelow, of Rochester — On the Culture of Potatoes, &c. — Manner of applying Manure, Ploughing, Planting — New Zealand Spinach — Culture of Mangel Wurzel or Field Beet — New Species of Potato, *Orelia crenata* — Potatoes — Potato Paste — Planting Ground to the Greatest Advantage — Curculio, Live Hedges, &c. — Cotswold and other Varieties of Sheep — On the Cause and Prevention of Foot-rot in Sheep — Disease in Cattle — Broken Wind — Library of Entertaining Knowledge; Rice Bunting — Prices Current of Country Produce in the New York and Baltimore Markets — Advertisements.

The American Farmer,

Edited by GIDEON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING. — One dollar per square, and in the same proportion for more than a square, or more than one insertion.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, MAY 3, 1833.

HORIZONTAL PLOUGHING—HILLSIDE PLOUGHS.

MR. SMITH: *Virginia, April 17.*
Not long since, in a party of friends, discoursing on the subject of agriculture;—its past history and present state in Virginia, the topics of *horizontal ploughing* and *hillside ploughs* came up; and a question was raised as to the real author or authors of these improvements. To the late Gov. Randolph, of this state, their *original invention* has by many been ascribed. If so, he merited the thanks of the whole agricultural community; and perhaps not the less if he merely *introduced* them both; and improved the construction of the latter, (the principle having been before suggested,) a degree of credit which is perhaps all that was ever claimed, either by himself or by his friends for him. As there however seems to be some doubt in the minds of some, on these points, I have thought proper to appeal to yourself, as being a probable source of the most correct information on this subject.

I hope you will excuse the following queries, as they proceed from a desire to ascertain the truth of history, (and why should not the history of agriculture be interesting to farmers?) or perhaps from the less dignified, though equally innocent disposition of an antiquary:

1st. Was "horizontal ploughing" first practised by Gov. Randolph, as some have supposed?

2d. Was he the original inventor of the "hillside" plough.

3d. Even supposing the ideas in either or both cases to have been original with him; were they *new*?

To these, I am much tempted to add a fourth—i. e. whether in many parts of our country, ploughing *truly* and *exactly* horizontal, would be a blessing or a curse?

That this question is not entirely without meaning, may hereafter appear.

Answers to these would be duly appreciated, by

A VIRGINIAN.

Probably "A Virginian" is in possession of all the facts extant on the subject of his communication. That Gov. Randolph first practised horizontal ploughing in this country, there can be little doubt; but that he was the original inventor of the mode, or of the hillside plough, is a matter of dispute. Certain it is, that horizontal ploughing was recommended by Columella, and most probably practised by the Romans; and of course a hillside plough of some sort was used by them. But that Gov. Randolph *introduced* both the mode of ploughing and the plough, and thus conferred a most important benefit upon his country, and particularly upon "Old Albemarle," there can be no question; nor can there be any as to the degree of honor due to him for the service thus rendered his country. It may be said that he merely happened to be the first to practice upon an old theory, and thus brought it into notice; but this is not correct. The theory was at least eighteen hundred years old, and had been passed by as unworthy of attention during the whole of that time; or at least it was resorted to merely by writers, for we have no record of its being reduced to practice. Now, although the genius of invention was not necessary to bring it into successful operation, there certainly was a genius and a spirit required to meet and overcome the prejudices and habits of routine of the people, more creditable to the possessor than a mere inventive genius could be.

Answers to the queries of our correspondent may be gathered from these remarks, so far as we feel authorized to speak. We regard Gov. Randolph, as the true author of horizontal ploughing, and of the hillside plough, because he has blessed our country with them, and we care not where he obtained the idea.

To the fourth question, we can only say that if there is a hill on the face of the earth that would not be benefited by horizontal ploughing in preference to the common mode, we are unacquainted with it;—of course we know of no part of our country where exact horizontal ploughing would be a curse, or would not be a blessing.

CATERPILLARS.

MR. SMITH: *April 26, 1833.*
I never have seen caterpillars so abundant in my life. My apple and peach trees were full of them. We commenced shooting powder at them, but found this would be a never ending means of destroying them. I set three men at work with mops of cloth fixed on the points of long poles, and by dousing them with a strong solution of salt and water, we have destroyed them nearly all. Yours, truly, T. P.

THE HORTICULTURAL SOCIETY OF MARYLAND.

For the diffusion of Horticultural Science and the Improvement of the Art of Gardening; Associated Nov. 20th—Incorporated by act of the legislature, at December session, 1832.

The Council of this Association have resolved to open the public proceedings of the society, by an exhibition of plants, flowers, fruits and other vegetable productions.

The exhibition will be opened on the eleventh day of June next, and will continue during that and the following day.

On the eleventh of June, popular lectures will be given in the hall of exhibition, and on the twelfth the society will hold a public meeting, when an address will be delivered.

In furtherance of the views of the society, the Council have resolved to offer premiums to the aggregate amount of one hundred dollars, to be awarded to the finest objects exhibited, by a committee of judges appointed for that purpose.

The following gentlemen have been appointed to act as committee of arrangement, viz: H. F. Dickhut, chairman, Z. Waters, Geo. Fitzhugh, James Moore, Edward Kritz, I. I. Hitchcock, Sam. Feast, John Feast.

All who feel interested in the advancement of Horticulture, are invited to lend their aid in furtherance of this design. Those wishing to exhibit plants or other objects of Horticultural interest, will please communicate their views to the committee of arrangement, stating at the same time the articles they design to exhibit.

Letters on the subject, must be addressed to the chairman of the committee, from whom any further information may be obtained.

May 3.

BUILDING HOUSES.

We extract from an able article in Silliman's Journal, on *Domestic Architecture*, the following on the subject of building houses, which we think will attract the interest and attention of many of our readers.

Smaller cities and towns have a great advantage in the intervals which occur between the houses, and in New England this advantage is turned to good account. The houses there are frequently built at a distance of twenty or thirty feet from each other, a space of several yards being also left between them and the streets.—The whole of this is planted with delicate shade trees and shrubs, and as the houses themselves are usually painted white and have small tasteful porticos in front, the effect is the most agreeable that can be imagined. Gentlemen who have travelled extensively in Europe, frequently inform us that they have never seen any thing that, as a whole, would compare in neatness and real beauty with some of the New England villages. It is a beauty in the power of every one of our towns, for the houses in

New England, though as comfortable and durable as in other places, cost I believe even less than is usual for edifices of their size. Nearly the whole is effected by the neat little yard, with its verdure, in contrast with the pure white of the facade, and by the little portico over the door. There is another characteristic in these towns, which I should like to see more common in the country; I mean the habit of planting trees along the streets. We should not have all the streets in a town treated in this manner; those for business should be kept clear, but in all others trees should be planted more or less thickly, as taste or convenience will admit. They give a town the appearance of richness and comfort, which cannot be so cheaply procured in any other manner. The elm is our most graceful shade tree, and will be found most suitable when the streets are wide; when narrow, the maple, I believe, is found to answer best.

As to country houses and their premises, so much depends on the character of the ground, and of all objects, even to a distance of miles, that the subject swells entirely beyond our limits. I must be allowed, however, to remonstrate against the warfare which is every where carried on against our noble forest trees, trees which should be estimated by us as far above all price. The first thing done in the new parts of our country, when a spot is determined on for a house, is to cut down all the trees within many rods of it, and then year by year, the work of destruction goes on, as if the very sight of a forest tree were odious. The house stands alone in the clearing, its inmates, and particularly the children roasted and browned under the hot summer's sun; but by and by, the nakedness of the situation is felt, and then are planted some Lombardy poplars "all in a row." Now, the trees which we cut down with such an unsparing hand, are the very kind which English gardeners cultivate with the most persevering diligence; and are planted here just as they labor most to plant.—And we too shall cultivate them before long, and shall then think, with the most bitter regret, of the sad destruction which we and our ancestors have made. But in vain; for all the art of man will not be able to restore in any length of time, such glades and thickets, and lawns, as we now possess. When about to build in a new country, we should save, near our house, an acre or two of the forest, and should guard it with the most watchful care. Morning, noon, and evening, it would be an agreeable retreat; its shade would be refreshing in our scorching heats; it would connect us in some measure, with ages long since gone, and would bring before us the wild, but high souled Indian, his council, his battle song, the war, the chase, the feast and dance; its noble and manly forms would gratify our taste; it would raise our thoughts to Him who is "a shadow from the heat, a strength to the needy in his distress." I say again, let us spare our noble forest trees. Many political considerations might be adduced to show the imprudence of our rude havoc among them, but for these we have not room.

USEFUL TABLE.

The number of plants which may be planted on an acre = 160 rods or poles = 4340 yards = 43,560 feet, is as follows:

Ft. apart.	No. plants.	Ft. apart.	No. plants.
1	43,560	11	360
1½	19,360	12	302
2	10,890	13	257
2½	6,969	14	222
3	4,840	15	193
3½	3,556	16	170
4	2,722	17	150
4½	2,151	18	134
5	1,712	19	120
6	1,210	20	108
7	889	25	69
8	680	30	48
9	517	35	35
10	435	40	27

AGRICULTURE.

(From Proceedings of the N. Y. State Agricul. Society.)

ON PRACTICAL HUSBANDRY.

Schaghticoke, October 25, 1852.

SIR,—I received your circular of the 24th Feb. together with the constitution and by-laws of the New York State Agricultural Society, and a packet of mulberry seed. And I now proceed, agreeably to your request, to give you some outlines of my farming, and of my observations in practical husbandry. The improvements in labor, in the expense of tillage, and in the other operations of husbandry, I think have produced a saving in expense, in the last fifteen years, of nearly fifty per cent.

Horses constitute our principal teams for tilling the soil and transporting our produce to market. Very little improvement has been made in their breed among us for the last 25 years. To be adapted to farm labor, these animals should have straight limbs, short neck, large boned breast, thick boned legs, common sized hoofs, thick main and tail, be well filled up in the flank or short ribs, and sixteen and a half hands high. A straight back denotes toughness for service of any kind. These points are best united in what we call Dutch horses. The encouragement given to racing, and the introduction of breeds adapted to that object, seems to be the principal cause of our working horses being poorer than they were twenty-five years ago. In racehorses lightness of form, and swiftness of motion are most desirable; but farmers require in their horses strength of muscle and limb, which are not to be acquired by encouraging breeds of opposite qualities.

In tillage husbandry, great additional profit is obtained by sowing about 4 lbs. clover seed per acre with small grains, which answers on interval lands, where plaster has no effect. This answers well for a bed of manure, when ploughed under, and will bear good crops for six years in succession. My course is corn, barley, pease or flax, and sometimes oats, and when these are gathered, I plough for wheat the same season, and sow in September. After the wheat is harvested, the field is pastured till spring, when I again plough for corn, and treat as before, until the second crop of wheat comes round, when it is sown in the spring with clover. The clover is mown one year, pastured, and the ground ploughed for wheat the same season. By so doing, land will improve instead of deteriorating, and will net an annual income equal to any bank stock, and certainly much pleasanter. Elevated lands will produce a good crop three years in succession, if the soil be gravel or sand, by adding a bushel of plaster to 4 lbs. of clover seed per acre, and treated as above. Clay soil requires animal manure as often as every three years, then treated as above it will produce a good crop. Farming business thus conducted, if the season is good, will produce a crop of any kind. I have found that it is better to spread animal manure mixed with straw or hay when fresh and plough it in, so as to have the fermentation take place under ground, thus preventing the heat of the atmosphere from producing too rapid a fermentation, that its properties may be absorbed by the soil.

The principal object for which lime is to be used in the cultivation of grain, is to prevent the ravages of insects. This is done by soaking the grain to be sown in lime water, and then rolling it in plaster of paris. I have been troubled this season by the weevil upon my wheat; it appeared about the first of July, in the form of a small yellow worm, upon each kernel of wheat under the chaff. It disappeared after the first shower of rain. After the wheat was gathered we discovered great numbers of flies upon the straw, which we supposed to be the weevil in another state: they have six legs and a sharp pointed proboscis, are of a light color, afterwards becoming dark; have wings but do not seem to fly. It is now October and these flies have not disappeared. They

have come on gradually from the north, and have been found to continue about three years in a place. Is it not probable that the fly has deposited the eggs, to be seen in gathering next year's crop? It is thought that tobacco is the best thing yet discovered to destroy them.

Flax should be sowed for a good crop after potatoes, and not oftener than once in seven years upon the same ground—which I have found by experience. There have been within a few years great improvements made in the implements of husbandry. Among these the reversed horse rake, in gathering hay, barley and pease, I have used for the last two years, and find it will enable one man and horse to do more work than six men in the common way, and do the work well. I have this season purchased one of Humphrey's patent threshing machines. It is simple in its construction, and can be purchased for \$60. With one horse and two men I will engage to do the labor of eight men, and thresh it perfectly clean. It leaves the straw almost full length, and worth more for fodder than it can be made in any other way.

The mulberry seed which I received from the society, I divided between four or five friends and myself. We sowed it in drills, in different kinds of soil, about the 15th of May. The plants are all doing as well as could have been expected from the coldness of the season. They are from fifteen inches to two feet high. I have tried for several years various methods of preparing cider. I have had the last year the best I ever made. Some I bottled without any addition, and to some I added a pint of mustard seed to a barrel. The latter is as clear as wine and of a delightful flavor; keeping much better, provided it be tightly bunged. Respecting the manufacture of cloth—In the first place we will take one pound of wool at 50 cents per pound, 6 cents for carding, 27 cents for spinning, 124 cents for weaving. Thus a yard and a half of flannel would cost 95 cents. Flannel of the same quality can be bought for less at the shops. As I am situated, having all my labor to hire, I find it better to sell my wool and buy goods to supply the wants of my family than to attempt to have them manufactured. But where a farmer has a large family of daughters, it is an object to manufacture as much as possible within themselves—it will pay their board and be useful employment. The same remark will apply to flax.

Of domestic wines—1st, Elderberry wine—To a quart of berries put a pint of water, and let them stand over night. In the morning mash them and let them just boil; then to a quart of juice put a pound of sugar, an ounce of cloves and a table spoonful of ginger to three gallons of water; boil and skim till clear, and when nearly cold spread your yeast upon toast and put it in your cask; let it work as long as it will, keeping your cask always full; when done working seal and cork it tight. In preparing wine it is always necessary to burn a rag wet in sulphur in the bung hole of the cask. This ought also to be done with cider. Apples will keep better than any other way put up in oats packed and headed tight to keep them from the air. In preserving fruits it is an improvement upon the usual method to let the fruit and syrup both be cold before they are put together.

Your friend, A. KNICKERBACKER.
J. BUEL, Esq.

(From the Genesee Farmer.)

AGRICULTURAL IMPROVEMENTS IN SCOTLAND.

Agricultural improvements in Scotland have probably been greater, during the last fifty years, than in any other part of Europe. In this period of time, a large portion of that country has been converted from unproductive naked wastes, of moss and hills, into fertile arable lands, pastures and wood, through the magic influence of enterprise, industry and science. Two of the most efficient operations in producing this change have been planting and draining. Thou-

sands of acres of naked hills have been annually planted with forest trees, which have afforded the triple advantages of beauty, shelter and profit. Thousands of acres of moss or morass, have been annually drained, and reclaimed to the uses of husbandry, at an expense which would startle our farmers, and yet with a profit that invites imitation. To take the first example which presents in a work before us: The expense of draining and embanking Barr Loch and the adjoining grounds, cost £10,000. The area of the Loch comprised about two hundred and thirty acres. The increased product or value of this ground, in the two years after the drainage was completed, amounted to thirteen per cent. on the outlay.

This great improvement in the agriculture and prosperity of Scotland, has been mainly accomplished through the combined exertions of her most wealthy, most scientific and best practical men, concentrated and brought to a focus in her "*Highland Society*."—This society was formed in 1784, and now numbers about two thousand members; and embraces her nobility, her wealthy merchants and mechanics, her men of literature and science, as well as her best practical farmers. The annual contribution of each member is about five dollars. It would seem that there all appreciate the importance of this great branch of labor and source of national wealth; that all feel desirous to promote its improvements, as directly or indirectly affecting their individual interests. A Quarterly Journal records its transactions, embracing the communications and prize essays transmitted to the society. And perhaps there is not a periodical which affords more useful and practical information to the intelligent husbandman than the Edinburgh Quarterly Journal of Agriculture. The objects of the society embrace the improvement of every branch of labor connected with husbandry. I venture to send you an abstract of the premiums offered by the society in 1829. It will show the diversified objects to which the society is directing its attention, the liberal rewards which it holds out for useful undertakings and improvements, and I think cannot fail to afford useful hints to our agricultural societies in the disposal of their premiums. The following is the abstract:

For Essays, Plans and Reports.

Present state of the Highlands and islands,	50
Experiments in draining,	15
Plans of farm buildings,	40
On maggot in live sheep,	15
Construction of fish ponds,	15
Rearing pigs and making bacon,	20
Thatching,	10
The construction of the plough,	50
Disease in turnips,	15
Culture of lucerne,	10
Construction of lime kilns,	15
Application of lime,	20
Stocking of pasture,	20
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Experiments and improvements.

Raising and preparing straw for the manufacturer,	25
Workers of straw plait,	13
	— 38
Improvement of land for tillage,	50
Draining moss and bog land,	60
Forming meadows from moss by irrigation,	10
do do by other means,	10
	— 130
Green crops,	50
Feeding off turnips by sheep,	60
Soiling sheep,	10
Cultivating mangold wurzel,	10
Bone manure,	45
Laying down land to permanent pasture,	20
Comparative advantages of laying down lands to pasture, with and without a white crop,	20

* The sovereign is \$4.44.

Experiments with fresh and rotted dung,	20
Laying down the poor soils to grass,	10
Saving the seed of natural grasses,	10
Turning moor land to pasture,	15
	— 260
For improving the breed of black cattle	312
For improving the breed of sheep,	70
Salving sheep,	10
Spaying sheep,	45
	— 125
Improving the breed of draft horses,	43
do do swine,	16
Best managed dairy,	25
do improvement in curing butter,	25
	— 50
For the cleanliest kept cottages,	80
To cottagers for management of bees,	20
	— 100
Honorary, for planting,	50
Raising pines for seeds,	20
do larch do	30
Planting ash and elm,	30
	— 130
Best cattle shown,	170
do sheep,	25
do pigs,	17
do horses,	30
Extra stock,	20
Implements, roots, seeds, &c.	15
	— 277
To be awarded at Perth fair, on animals, im-	
plements, &c.	340
	2116

(From the Genesee Farmer.)

IRRIGATION.

Pittsford, March 20, 1833.

The advantages of irrigating land, especially grass land, are not unknown; still it is very generally neglected. Most farmers know the benefit of turning the water from the road side upon their mowing lots, and yet they will suffer the permanent streams that run through their farms to pursue their natural courses, without ever diverting one drop into artificial channels to fertilize and enrich their fields. True, that in a country as level as western New York, much less advantage can be taken of streams, than in a country abounding in hills. Yet there are hundreds of farms in Monroe county, that might be greatly improved by judiciously diverting the streams from their accustomed courses, and hundreds of tons of hay might be added, with very little expense to the annual crop.

In the hilly country of Vermont, I owned a farm, over which I carried the water of a small stream in artificial channels, more than a mile. Lands that did not yield half a ton to an acre, were thus made at once to yield two tons; by which means I added to my crop six or eight tons. A little experience taught me that I could carry water where I had not the least suspicion it could be carried. Every stream that runs with any rapidity, may be used for this purpose.

For the benefit of farmers, I will state my method of procedure. I first selected the place at which I thought best to take the water from the stream.—Here I made a dam sufficiently high to conduct the water into a channel on the bank. The dam may be made of wood or stone, as is most convenient, but stone are best, as they are most durable, and less liable to be washed away. I then drew two furrows with a plough, turning the sod down toward the stream, and pulling the sods of the second furrow upon the top of the first. This will make a channel sufficiently large for ordinary purposes, where you do not wish to carry the stream to any great distance.

These channels should be drawn as nearly level as they can be, and give a current to the water. Most

farmers draw them merely by judgment, and of course very inaccurately. I had an instrument to which was attached a spirit level, so that I could lay them with great accuracy.

But any farmer can make an instrument in fifteen minutes, that will answer the purpose very well.—Take a piece of plank five or six inches square, through this bore a hole to receive a staff about three feet long, sharpened at the lower end, to stick into the ground. This is used as a standard, on which you must lay a smooth planed board about a foot square. The method of using it is this: Place your standard below your intended canal, so that the top will be level with your dam, or the place where you design to take the water from the stream. Then turn water upon the top of your board, and so adjust it as to bring it to a level, or a little descending in the direction that you wish to draw your channel. Then with your eye look across the top of your board, and see where it strikes the ground. Here place a boy with a hoe to make a mark in the sod; and let him go on and make these marks as you direct, once in a rod, and oftener if the ground be very uneven.—Thus go through the whole extent that you wish to make your channel.

Then with your plough draw your furrows through these marks, being very careful not to fall below them, or go above them. A little care in drawing the furrows will save much labor in making the channels.—If not drawn with accuracy, it will be necessary to sink the channels in some places, and to raise the banks in others.

From these channels the water will percolate, and fill the ground below them; and you may, in as many places as you see fit, let it overflow the bank and spread on the surface. A better way is to set boards in the bank, with an auger hole for the water to flow through it in such quantity as you may wish.

Even small streams, that fail early in the summer, may be of great use, because if the ground be well saturated with water in the spring, it will give the grass a start, and if it be well watered on the first of June, it will not suffer from drought before the crop is matured.

On the subject of irrigation, I have learned much by experience, and am so confident that thousands of dollars might be added to the annual produce of our fields, that I feel desirous to see this improvement in husbandry more generally introduced. Any thing that I can do to aid my fellow citizens in such improvement, would give me pleasure.

E. D. ANDREWS.

(From Proceedings of the N. Y. State Agricul. Society.)

EXTRACTS FROM A LETTER FROM LE RAY DE CHAUMONT.

DRYING FODDER.—I have noticed a curious method of drying fodder by fermentation. I think it worth giving you some details about. They put the hay in haycocks on even ground, very soon after it is cut, i.e. 12 or 15 hours, in piling it very equally and treading it down. Rain does not injure it materially. The diameter of a haycock does not exceed four feet, and the height equal to two-thirds of this diameter. As soon as the heat produced by fermentation is too great for the hand to remain in the middle of the haycock, say 20 or 24 hours after, they use all diligence to spread the hay, bad or good weather, for it is spoiled in a few hours. Three or four hours are sufficient to dry the hay entirely. The outer part which is not fermented is put aside and treated by the ordinary means. This hay can be preserved several years without experiencing any deterioration. It has a vinous smell which cattle like when once accustomed to it. It is very well adapted to the use of cattle in general, and particularly to horses. They can eat of it freely without inconvenience, even when it is recently made. This method is chiefly advantageous

to clover and lucerne; because it dries them sooner—it prevents the leaves from falling, and preserves the nutritive principle.

CULTURE OF HEMP.—Wherever I have travelled I have observed that they cultivate hemp. I was struck with the immense expense that cultivation cost, chiefly in manure. If now and then I met with some privileged piece of ground, which by its fertility did not require such a quantity of manure, the price of the soil was so high that the mere interest of the same would have purchased, to my knowledge, in either Jefferson or Lewis counties, a similar quantity of land, as good at least for the production of hemp, and where the cultivation of it will not cost so much. I hope our society will think it advisable to recommend to the farmers a particular attention to the raising of hemp, wherever the soil is favorable to its cultivation.

(From Proceedings of the N. Y. State Agricul. Society.)

VARIETIES OF THE POTATO.

House of Representatives, U. S. February 16, 1833.

DEAR SIR:

I enclose you extracts making almost an entire copy of Mr. Lawson's essay on the potato, including his list of the varieties cultivated in Scotland, and their qualities.

I believe the publication of this essay of Mr. Lawson would be useful. But I am most anxious to obtain a like examination of the varieties of this useful plant cultivated in our state, in order that our farmers may know which are the best and worst of these varieties. With this knowledge the farmers will go on cultivating their usual and customary variety whether indifferent or bad; with correct information as to the best and most valuable varieties, it is to be hoped that the farmers will abandon the cultivation of varieties, bad or indifferent—and devote themselves to the cultivation and improvement of the best varieties. Such will certainly be the course of all wise and prudent agriculturists; and it is reasonable to expect their example will soon be followed by all others, as well from considerations of interest, as from a desire to avoid the ridicule and reproach of persevering in error and folly. With great respect,

Yours, &c.

MICHAEL HOFFMAN.

JESSE BUEL, Esq.

(From the Quarterly Journal of Agriculture, &c. &c. of the Highland Society of Scotland, No. 19, December, 1832, p. 364.)

ON THE PRINCIPAL VARIETIES OF THE POTATO, cultivated in this country. By MR. CHARLES LAWSON, Seedsman to the Society.

After some general observations on the potato, in which he expresses a doubt of the correctness of the opinion that the new varieties become bad by the age of about 14 years, Mr. Lawson says:

"No doubt extensive experience has proved, that the cultivation of any particular variety of potato, for a continued succession of crops, in the same soil and situation, injures the quality, and diminishes the quantity of the produce. But this is a law applicable to all cultivated plants, and only shows that attention to the change of circumstances and to rotation, is also necessary in the cultivation of the potato."

I proceed with further extracts:

"What is wanted regarding the potato is,—

"1. The fixed application of a particular name to each of the more important varieties;

"2. The determination of those varieties, the cultivation of which ought to be abandoned;

* Note by the transcriber. Manure well to waste money; and at the same time in your garden always plant your potatoes on the same spot, and you will probably succeed in diminishing the quantity of the crop, and be about certain to change a good into a very bad quality of potato. Such is the common practice, and such is general the result.

"3. The indication of those more particularly adapted to particular soils, situations and purposes;

"4. The knowledge of those to which we might look with most certainty as improvable by crossing.

"With these views I have prepared the following descriptive table of the varieties which I had the opportunity of growing and examining this season.

"There can be no doubt that a change of soil, climate and treatment, may alter the qualities of the tubers in a considerable degree; but it appears to me not less true, that no circumstances will very materially change the general tendency to being early or late, the general form, the color, or the general habit of growth.

"I have therefore noted these particulars as affording collectively discriminative characters of sufficient value.

"The tubers are composed of water, starch, fibrous matter, mucilage and saline extract. It is probable that the mealiness depends, either upon a due proportion of these principles, or upon the mucilage of some being more or less coagulable by heat than that of others; or it may occasionally be affected by the acidity* of the spring water, in which they are boiled. However this may be, I have noted the qualities of the different varieties as to their being mealy or waxy.

"The comparative liability to disease is the next circumstance attended to. The mode of growth of the stems whether inclined to be erect or drooping, has also been noted.

"The flavor, I apprehend, depends very materially on the increased action of the vital functions of the leaves, and does not admit of being very intelligibly expressed.

"The degree of productiveness is a matter of great importance, but can be expressed only by very general and rather vague terms.

"Although the same variety of potato, cultivated under different circumstances, may yield different proportions of its component parts, yet, as a comparative view of that ingredient of most importance in its application as food, namely, the starch, from the different varieties cultivated under the same circumstances, will afford a good criterion as to their relative value. I have ascertained this by rasping eight ounces of tuber of each variety, which being immediately mixed with a sufficient quantity of water, was poured on a fine hair sieve, through which the water passed, carrying with it the white precipitate. The weight of this sediment, deposited from the filtrated fluid, after being thoroughly dried, is marked in the table. In those cases where the difference was great, to prevent the possibility of mistake, I made second trials. I think it likely, that had the macerated potato lain for a day, and been frequently stirred, the quantity of starch would have been greater; but as the whole were done exactly in the same way, the products answer equally well, as affording a comparative view.

"In the specimens of starch produced by the different varieties, a considerable difference was perceptible, both as to color and texture; and on trying the specific gravity of twenty specimens, I found it to vary from 1 to 8 per cent.

"The fibres of eight ounces of tuber, when dried, weighed from 180 to 216 grains troy.

* Note by the transcriber. Roasted potatoes of the same variety are in general more mealy than boiled ones; and yet if the roasting be continued, it destroys the mealy quality as well as the flavor of the potato. Potatoes boiled in the waters impregnated with lime, as they are on the Mohawk, and most of the western counties, are mealy and good.

† Note by the transcriber. The very young potato is watery, and mostly destitute of flavor, and I believe nearly so of starch. Such is the quality of the tuber, while the stalks and leaves are in the most growing condition. After the leaves and flowers are perfected, and when they may be supposed most able to perform all their functions, the tuber improves—and continues to do so, until the leaves die of age.

"The specific gravity of the tubers themselves, is nearly in the same ratio as that of the starch, as above indicated. A cubic inch of twenty of the varieties which I tried, weighed from 295 to 312 grains. The comparison, however, requires to be made with greater accuracy than I can accomplish at present, in order to discover whether Mr. Knight's opinion, 'that probably the nutritive property of the potato is nearly proportionate to its specific gravity'—be correct. In the mean time, however, my friend Mr. Macgillivray has obtained for me from Doctor John Murray, the specific gravity of six of the varieties, sufficiently adapted for contrast, namely:

No. 45, Late field kidney,	- - -	1135
No. 36, Don,	- - -	1121.9
No. 53, Emperor,	- - -	1108
No. 21, Taylors,	- - -	1099

Extracts from the List of the Specimens of Potatoes, with their characters, sent to the Highland Society, by Mr. LAWSON.

POPULAR NAMES.	Early or late.	Form of the tuber	Color of the tuber	Mealy or waxy.	Flavor.	Productiveness.	Grains of starch in 8 oz. of clean tuber.
Dutch early,	Early	Rd & small	White	Mealy	Good	Prolific	325
Williamson's favorite,	Early	Round	White	Mealy	Good	Prolific	452
Early frame,	Very early	Roundish	White	Mealy	Good	Medium	262
Buff,	Late	Round	Buff	Mealy	Superior	Prolific	307
Dwarf frame,	Earliest	Round	White	Waxy	Inferior	Medium	279
Foxly,	Very early	Round & flat	White	Waxy	Inferior	Unproductive	262
Fifeshire early,	Early	Oblong	White	Mealy	Good	Not v. prol	465
Taylor's forty-fold,	Medium	Round	Dull red	Mealy	Superior	Prolific	235
Black skinned,	Late	Round	Dk purp	Mealy	Delicate	Prolific	383
Red Nose kidney,	Late	Long & flat	Wh & pk	Mealy	Good	Medium	244
Lancaster pink,	Very late		Br Pink	Waxy	Medium	Prolific	411
Late Wellington,	Late	Oblong	Dk red	Mealy	Superior	Prolific	542
Don,	Late	Round	W & pur	Mealy	Superior	Very prolific	399
Scotch red,	Late	Round & flat	Deep red	Mealy	Superior	Prolific	488
Perthshire red,	Late	Oblong	Red	Waxy	Good	Prolific	518
Kay's American,	Very early	Oblong	Redish	Mealy			390
Hopeton early,	Early	Round	White	Mealy	Good	Prolific	395
Early Champion,	Medium	Round	White	Mealy	Strong	Prolific	306
Asb-leaved,	Early	Oblong	White	Waxy	Inferior	Very prolific	363
American,	Early	Round	White	Mealy	Good	Prolific	385
Early Wellington,	Early	Round	White	Mealy	Good	Prolific	328
Early field kidney,	Early	Long & flat	Wh & pk	Mealy	Superior	Prolific	295
Sutherland kidney,	Medium	Oblong & flat	White	Mealy	Good	Prolific	355
Musgrove's G. kidney,	Early	Oblong	White	Mealy	Good	Very prolific	390
Musgrove's snow white,	Early	Oblong	Medium	Medium	Good	Very prolific	395
Scotch grey,	Late	Round	Liv pur	Medium	Good	Unproductive	217
Albany kidney,	Late	Oblong & flat	Wh & pk	Mealy	Superior	Prolific	2.2
Late field kidney,	Late	Oblong & flat	White	Mealy	Superior	Very prolific	415
Poor Man's profit,	Late	Rd & oblong	Red	Mealy	Superior	Very prolific	389
Lady Mary,	Late	Round	Purple	Mealy	Superior	Not prolific	377
Late Champion,	Late	Round	White	Medium	Good	Prolific	197
Ox Noble,	Late	Round	White	W & wy	Indifferent	Very prolific	295
Yam,	Late	Oblong	Pink	Wy & wa	Indifferent	Very prolific	262
Cork red,	Medium	Round	Red	Very mealy	Superior	Prolific	356
Onion Potato,	Late	Roundish	Purplish	Very mealy	Good	Prolific	304
Black Prince,	Late	Round	Black	Md mealy	Indifferent	Prolific	345
Peruvian Potato,	Late	Oblong	White	Md mealy	Indifferent	Prolific	435
Biscuit Potato,	Late	Round	Pink*	Very mealy	Superior	Prolific	316
Prize of Westerfield,	Late	Round	Red	Mealy	Superior	Very prolific	295
Chestnut Potato,	Late	Oblong	Purple†	Very mealy	Superior	Prolific	397
Wakefield Potato,	Late	Oblong	Red	R waxy	Medium	Prolific	325
Early pale red,	Mid early	Oblong	Br red	Very mealy	Superior	Productive	356
Marbled,	Late	Round	Marble†	Very mealy	Superior	Productive	423
Early red,	Early	Oblong	Red	Very mealy	Superior	Productive	305
Cup,	Late	Round	Light red	Mealy	Good	Productive	441
Bread Fruit,	Late	Round	White	Mealy	Superior	Prolific	395
Scotch black,	Late	Round	Black	Mealy	Superior	Prolific	272
American black,	Late	Round	Dk purp	Waxy	Inferior	Prolific	364
London kidney,	Early	Kidney	White				

* With pink eyes.

† With pink eyes.

‡ Pink and red.

HORTICULTURE.

(From Proceedings of the N. Y. State Agricul. Society.)

EXTRACTS FROM A LETTER FROM LE RAY DE CHAMMONT.

Plessis, near Vendome in Touraine, 1

J. BUEL, ESQ. Dec. 16, 1832.)

Cor. Sec. of the State Agricul. Society, Albany.

Sir.—When I resolved, last summer, to pay a visit to my native country, I was much pained with the idea that it would deprive me for a considerable length of time of the satisfaction of uniting my efforts with those of such of the members of our State Agricultural Society as were zealous in promoting its success. However, I was relieved, when I considered how many there were in our society who could render the same service; while, during my travels and stay on this side of the water, I could make them useful by observations and notes collected on my route, upon whatever might be worth communicating; also, by connecting our society with some of those in France whose object is somewhat similar to ours. The alliance of such societies cannot but prove useful and produce improvements.

Having begun my travels rather late this year my information will not be as interesting as I could wish; but I hope, that during the other year I intend to appropriate to my stay in Europe, I will have collected facts more worthy the attention of our society. My travels have been through those parts of France, of the duchy of Bade and Switzerland, which have much analogy, in respect to climate, to that of New York.

CULTURE OF THE VINE—I will begin by the grape-vines.

I am still more of opinion, since I left America, that serious attention should be paid to that important cultivation. I am more certain of the success which is to attend it in the state of New York.

I have received from the county of Jefferson, information that grapes perfectly ripe have been picked from vines cultivated in open ground, and the letter which mentioned it reached me here when they had not yet begun their *rendages*, and were not expecting the grapes to be sufficiently ripe for several days to come. You must consider that I am here in that celebrated country for fruits, Touraine, which is the centre of France. They were much more backward in those countries I had just left and mentioned above, and in some parts of which wine is made in quantity.

You know how uncommonly severe and long was last winter in the state of New York, and I must observe that in this country it was one of the mildest; and the spring very fine, as well as the summer; this last season was, however, rather too dry. I was still more astonished at the comparative quickness of the growth of the vine, and the abundance of its production. It is so much in our favor, that I not only created wonder, but yet a sentiment bordering upon entire incredulity, when I mentioned the produce of a cutting planted along the house of Major Brown, late in 1827, and which had produced above one hundred fine clusters, perfectly ripe in the middle of September, 1830, and more than three hundred the following year; at the same period, equally good and fine flavored; a fact which has been well ascertained by the agricultural society of the county, and published afterwards in their transactions.

My great objection and I must say the only one which I had, and even published formerly, to the cultivation of the vine, with a view of making wine, is removed by the happy result of many inquiries and observations I have made, in examining attentively a method very different from the one which is uniformly adopted in all the vineyards of the middle and northern parts of France. There nine-tenths of the work, at least, is made by the hand of man, and part of it so painful and hurtful to the body, as to injure

materially the workmen; while in many parts of the south, and in some parts of Switzerland, where very good wines too are made, the most painful and more laborious part of the cultivation of the vine is achieved by the work of horses and cattle. The difference is such in favor of this country, between the two methods, that I do not hesitate to say, that every thing considered and calculated, this last method, with some improvements I will suggest, will not occasion you more expense than in France, to produce the same quantity of wine that would be obtained by the other method, which would cost you nearly three times as much as in France. This result is not only occasioned by the difference of the price of labor of men in the two countries, which in the preferred method is substituted for the greatest part, by the work of animals, that do not cost more in the state of New York than in France, and which can be fed cheaper; but because this preferred method owes principally its greater produce to its having a much greater proportion of land consecrated to the same quantity of vine-stalks, and that the land is considerably cheaper than here. Mr. Thiebault in comparing the two methods, to prove the immense advantage of the one he recommends, does not calculate the produce of an acre, but of the number of stalks. He says "that 2000 stalks trained according to this method, will produce nearly 26,000 gallons of wine; while on the other hand, 6,000 stalks trained in the ordinary way, produce, in common seasons, only from 750 to 1300 gallons, and in the very best seasons only about 2600 gallons." This enormous difference of thirty to one, I do not warrant, but only that there is a considerable one. Mr. Thiebault adds, that the increase in quality is also considerable.

Considering the comparative value of the land you would appropriate to the cultivation of the vine, with the same nature of land in Europe, and that there is a difference of at least nine-tenths in favor of the United States, I would propose an altogether different and more economical method in the first planting of the vine. I would set the roots and wooden posts a rod apart, instead of eight feet, as recommended by Mr. Thiebault, leaving as he does, the space between for the cultivation of grain or other productions, as preferred by the farmer. The trenches two feet broad and one foot deep, should be made with the plough and the scraper, which can be equally useful and convenient in covering the roots. Some alteration and economy could be made in the hand labor, when we take into consideration that a considerable part of it can be done by children during the vacations. On the line of that plantation I would recommend planting, in an eastern and western direction, a mulberry tree alternately with the grapevine. The wooden post will for several years be the supporter of the grapevine, but it will probably be rotten and rendered useless when the vine will have sufficient strength to need no support for its stalk, but would require some aid to keep its lateral branches in the desired position. The mulberry tree will then answer the purpose: It must be well taken care of at all times, and will pay not only the expense but yield a handsome benefit for those who will pursue the cultivation of silk, or who have in their neighborhood some one cultivating it. At all events, their cattle would relish that food which would come for them in a very good season. The tree must be trimmed in such a way as to have one single stock and a very small head, which when arrived at the height of about eight feet, must be regularly trimmed twice in the fine season, when its foliage is most suitable to the feeding of worms. In that way the mulberry will give no injurious shade either to the vines or to the grain or plants which are to be sown between the ranges. You will observe that in that way of planting and cultivating the vine, the cattle, as I have stated in the beginning of this article, will do the essential part of the work; and that they not only afford the greatest help for cultivation, but yet come in for the hardest share at the

time of collecting the fruit. I will one day give more details upon what is to be done in the years which will follow the planting and first growth; and you may rely upon my readiness to transmit to the society what further information they can ask from me. I intend to examine more minutely this kind of cultivation, and ascertain as near as I can the real produce. Meanwhile, I think the society may boldly recommend the cultivation of the vine, chiefly in the west and north of the state. To support this advice I cannot better conclude this article than by quoting, what I notice with pleasure, in a letter I have just received from the respectable secretary of the agricultural society of Jefferson county. Among the different valuable details he gives me of the cattle show and fair which took place the 26th September last, I find the following: "A curious exhibition of the process of silk-making was interesting; and Dr. Guthrie accompanied his specimen of grapes with a letter, stating that the culture of the grape was as easy and certain in this country as that of raising apples, or any other of the vegetable productions."

CULTURE OF SILK—The next important article is the culture of silk. All I have seen and heard upon that subject, since my arrival in Europe, confirms me in the opinion, that the United States in general are as well if not better adapted to the cultivation of the mulberry and the culture of silk, than the most favored countries on this side of the water. The cocoons that we raised last year at Le Raysville, with so little trouble, and such an imperfect knowledge of the proper management of this delicate worm, have been much admired by those capable of judging, to whom I presented them for examination, and the silk thought of the very first quality. I have ascertained that in the duchy of Bade, they rear the mulberry tree in very indifferent soil, rather poor, and cultivate the silk with success. Certainly where the worms are educated, the season is far from being as favorable to them as it is in the north of the state of New York. I hope that the efforts of the society for encouraging the culture of silk will have been successful, and I am very anxious to see the report which will be made to the society on a subject of such vital importance.

RURAL ECONOMY.

(From the Southern Planter.)

ON PAINTING HOUSES.

Starrington Farm, Feb. 12, 1833.

Sir.—We use paint on our wooden buildings with two objects: first, ornament; second, durability. Was oil used by itself, without any coloring matter, the wood would be made more durable than it is with paint; but as ornament is a considerable part of the objects of painting, and as the addition of paint to the oil, when properly prepared, does not very materially injure the preservative qualities of the oil, the ornamental effect of the coloring matter more than counterbalances the injury it does. Paint, when properly prepared, therefore, while it is highly ornamental to wooden buildings, so materially contributes towards their durability, that there is economy in using it.—But as it is generally prepared, (I may say always,) the ornamental effect of it on the outside of buildings is made only temporary, and its preservative qualities wholly destroyed. It is only necessary to look at our quickly decaying wooden buildings, with the paint washed off more or less in different places, according as it is exposed to the sun and rain, to be satisfied that the expense of painting has added very little towards preserving the building; and whether a building looks better without paint, or with paint nearly all washed off, with here and there a little remaining to show that it once was painted, taste must determine. If what I have stated be fact, that paint, as mostly prepared, is of little value, it will be well to look into the cause of it that the evil may be remedied; and if I give the correct cause, happily the evil is removed

without expense or trouble; or rather, it is cheaper to paint well than in this defective manner. We have only to leave out the spirits of turpentine, and we will have good paint. Ask the painter why he adds it to the paint, and he will tell you, to make it dry quick. This is just the same as saying, to destroy the oil, which renders the paint useless. Now let us reason upon it and see if this is correct. If we pour oil on wood it soaks into it, and after it is all soaked up, if we apply more oil it will strike still deeper and soak up more; when it has penetrated sufficiently deep into the wood as to prevent moisture from rain, &c. penetrating as deep as itself, the wood is rendered very lasting. This would be the case if a building was simply covered with two coats of oil without paint. If we give it only one coat of oil, with a sufficient quantity of paint to give it color, the wood would so quickly soak up the oil that the paint would be left a dry powder on the building, that would be easily rubbed or washed off. If we give it first a coat of oil with a little paint added to it, the oil soaks into the pores, another coat of oil with the proper quantity of paint, while the pores are filled with the recently put on or first coat, remains sufficiently long before the oil is soaked up by the pores, for a part of it to dry with the paint, which forms a permanent covering of paint. This is the advantage of giving two coats of paint; if the first coat was oil only, it would be better. When a house is thus painted, all the injury done by the paint is the oil which it retains and prevents from soaking into the wood, and this is in part, perhaps wholly, counterbalanced in forming a firm external covering which tends to exclude moisture; thus painted a building is preserved and ornamented. Now what will be the effect of adding spirits of turpentine to the oil? We know of nothing better calculated to destroy our intentions in the use both of the oil and paint than this addition of turpentine. Every housekeeper knows that if oil is on her floor, spirits of turpentine is the application to remove it. Every wash-woman knows that if oil is on her clothes turpentine is the application to remove it; and how does it remove it when the oil and turpentine are added together? a chemical union takes place and the qualities of both are destroyed, and although either the oil or turpentine by themselves when applied on wood would add to its durability, yet when added together the original quality of both are destroyed, and the application is useless, just as an acid and alkali, when mixed together, destroy the qualities of each other and the effect of neither remains. Now when a building is painted with two coats of paint to which spirits of turpentine is added, instead of the first covering of oil (which has very little paint) being soaked up, and the second covering, as the pores are already fed, soaking up the oil so slow that a part of the oil may dry in the paint, thus making a firm coat of paint on the surface, which will exclude moisture and prevent the evaporation of the oil, thus making the wood almost as lasting as time, and the color to remain as long as the wood lasts; what will be the effect of this addition of spirits of turpentine? The oil is decomposed, and instead of soaking into the wood and slowly drying in the paint to give a firm covering, it is quickly evaporated by the sun, the paint is left a useless powder on the wood; where it is not sheltered from the rain, it is soon washed away; and in places where it only gets wet without being washed off, as the qualities of the oil are destroyed, it retains moisture and hastens decay. We have only to go to a house which was painted white, and examine the somewhat sheltered spots where they get wet by showers, yet the rain does not beat upon them so as to wash off the paint, and scratch off the paint, and we will find the surface in a state of decay from the paint not excluding moisture but retaining it. When pine wood is painted it should more especially have only oil and paint without the spirits of turpentine, as there is in the wood turpentine sufficient to injure the oil. If we examine the

shingles or weather-boarding of a house; we will find wherever there is a knot or *fat place*, there the oil is decomposed by the turpentine in the wood, and the paint destroyed, even where no spirits of turpentine was added to the paint.

Does not this truth, which I believe all will allow, that turpentine makes paint dry quick, prove that instead of soaking into the wood the oil is decomposed and evaporates, show the destructive effect of this addition of spirits of turpentine to paint, and although the inside painting of houses remains when turpentine has been added, yet it would be more durable if the turpentine were left out. The oldest paintings we have appear as warm and glowing as when first executed, while the paintings of the first masters of modern times are injured, mostly as I think by the free use of turpentine. The fine paintings even of Sir Joshua Reynolds are losing their beauty. By some it is supposed that the paints used now are not as good as they were in former days. 'Tis not the fault of the materials, but the preparation. Oil, for instance, and white lead are as good now as they ever were, and were they used without turpentine or any thing else, as the painters say to make them dry, (or as we say to decompose the oil and destroy it,) would last as long and be as good as they ever were. If we calculate the annual amount of money used in the purchase of turpentine, and to this add the amount of loss from the injury it does, we will find it an enormous expense. From such trials as I have made, I believe the oil of palma christi to be superior to flax seed oil for preserving wood. If the two oils be put on wood, the palma christi oil will be found much more difficult to remove by decomposing with turpentine, which is proof it will be most durable. Palma christi oil, when properly prepared by boiling, is as clear and good as cold pressed oil. A good acre of land will produce from twenty to thirty gallons of it. Planters who wish to paint their buildings, would be able to make the best of paint oil, by cultivating a few acres of it, and when durability more than ornament is the object, as in out buildings, gates, &c. giving them two coats of palma christi oil, without paint, would have the desired effect. The posts of my pigeon house, which were dipped in hot palma christi oil before they were put in the ground, look like they would last for generations to come; while the posts about the yard, garden, &c. are considerably decayed. Was the exposed six or eight inches of shingles dipped in a hot pot of palma christi oil, the expense would be a trifle, and they would be very lasting. Some years ago, by neglect, a pot of oil, with which I was experimenting, was spoiled by burning; the roof of the house was quite low, the building being deep in the hill side, I threw the oil on the house roof; in taking this house down a few days ago, these shingles were found as sound and clear of moss as when put on, while the others were much decayed. But the durability thus obtained would not be the only object; it is known that old shingles become covered with a kind of mossy growth; this growth is nearly as quick to take fire as spunk, the smallest spark that falls upon it when dry may take fire. Perhaps nine out of ten houses that take fire from sparks falling on the roof, do so from this mossy growth, which never is produced on wood that is oiled; were shingles dipped in hot oil before putting them up, it would be a preventive from fire from sparks. A few days ago, during almost a calm, at mid day, when only a few coals were in the fire place, my house roof was discovered to be on fire. As there was no ladder nor no way of getting at the fire, it seemed as though the house would burn down. A very strong man, however, by getting in the window of a house not far off, was able to deaden the fire a little by throwing water with great strength; some drops would reach the fire; thus some little time was given for reflection. A man of great muscular strength with a small hatchet commenced cutting through the ceiling and sheeting. The fire began to blaze, the wind began to rise, all hope of ex-

tinguishing the fire was gone; he had however cut a hole through, and was able to tear off the boards and put out the fire. These shingles, upon examination, were found sound, but they were covered with this mossy growth. A very small spark must have set it on fire, for upon trial it was found almost as quick to take as gunpowder. Had these shingles been dipped in oil before they were put on the house, I would have been safe from such an accident, not only now but for many years to come.

ROBT. R. HARDEX.

(From the Maine Farmer.)

INFLUENCE OF CATTLE SHOWS.

MR. HOLMES.—In the New England Farmer of 1829, I observed the following notice:—

"That one of the firm of a house in Boston, that slaughters and packs more beef and pork than any other in New England, has said within a few days, that the improvement in the quality of neat cattle, in the last ten or a dozen years may be fairly estimated at ten per cent.—that is to say, the cattle now driven to this market will yield, in consequence of a favorable change in the frame of the animal, ten per cent. more flesh than was obtained from those which came to us twelve years ago—and the improvement he wholly and unhesitatingly ascribes to the influence of *Cattle Shows* in the different parts of the country. The single house alluded to, slaughters from three to six thousand head in a year, taking the average weight of each to be nine hundred pounds, it will be at once seen that this improvement in the quality of neat stock will amount to no less a sum than from 15 to 30,000 dollars a year, on the beef purchased by that one house—to say nothing of the pork. The improvement in swine, by a change in the breeds, is said by the same gentleman to have been quite equal to that in neat cattle."

The writer of the above article says, "he has conversed with the principal dealers in provision, and they all confirm the above account." "These are facts (says the writer) which ought to take fast hold of the public mind—they show the vast good which may be done by a little judicious encouragement. No doubt the improvement in dairies has been in the same proportion, though not so easily ascertained." From the above, it will be seen that about one per cent. a year improvement was the consequence of their Cattle Shows. Certainly, we in Maine, might equally improve our cattle and swine, if we have not. But I am happy to say, that he who looks back and reflects what our stock was at the time alluded to, must own that we have done much. Still much more is necessary, and undoubtedly will be effected by our Cattle Shows and enterprise. Yet we hear some object, because say they, "the poor have not an equal share of the premiums." Who will doubt but the poorer class are benefited indirectly, if not directly by such noble results.

If farmers who send their beef and pork to Boston market, had improved their stock for ten or twelve years previous to 1829, at the rate of about one per cent. a year, making ten per cent. and have continued to improve them in the same ratio for the four years since, which none can reasonably doubt, who knows that since that period much has been done, by importing the best breeds, crossing, &c. the improvement would now have been fourteen per cent. The farmers in Maine, it is hoped, will take courage and press on in this good and laudable affair, until they arrive to as great a measure of improvement, and thus benefit the great mass of the community.

Now I would ask your correspondent who observed that the poor were not able to be benefited by premiums, if the measures and results brought to view above, are on the whole, injurious to the poor? Do they not fair better in a rich than a poor community, where beef and pork is plenty?

A FRIEND TO IMPROVEMENT.

MISCELLANEOUS.

(From the Journal of Health.)

FOOD OF SEAMEN—PRESERVATION OF FOOD.

The question relative to the best and most convenient aliment for the nourishment of the crews of vessels, is one evidently of very great importance to every commercial community. It has consequently received from many of the maritime powers of Europe a very great deal of attention. From none more so than from that of France; to the experiments performed at its suggestion, on the most extensive scale, and under the superintendence of men adapted, as well from their scientific acquirements, as by their habits of close observation, to obtain from them correct results, we are indebted for many valuable facts on the subject of aliment generally.

The latest publication in connection with this question, is that of M. Keraudren. The following extracts from this memoir, will, we are persuaded, be, in many points of view, interesting to most of our readers.

To enable an individual, remarks the author, continually to undergo toilsome labor, and confront new dangers, courage is not alone sufficient—his body must likewise be healthy and robust. When man becomes feeble in body, he loses his energy and his boldness. Sufficient and proper food is especially necessary to the maintenance and development of his physical strength. The mariner, especially, therefore, requires a proper nourishment; for we all know what are his fatigues, and by how many perils he is constantly surrounded. When we consider that at sea his diet is composed principally of salted meat and leguminous seeds, in a dry state, we perceive how important it is that these substances should, at least, be of a good quality. To secure this has long been an object of solicitude. In 1771, M. Poissonnier Desperrieres, adjunct inspector of marine hospitals, proposed to restrict the diet at sea principally to vegetable substances. This gentleman attributing the origin of putrid diseases to the use of animal food, and considering scurvy a necessary consequence of living on salted meats, believed that by a diet chiefly vegetable these diseases would be prevented or rendered less malignant. His object would have been better attained had he, in place of dried leguminous seeds, been enabled to furnish the marine daily with fresh vegetables during their residence at sea.

The effect of the diet proposed by M. Desperrieres upon the health of the national seamen was ascertained by experiment. The frigate *Belle Poule* was provisioned accordingly, and after a five months' voyage returned to Brest, without her crew having experienced any disease, but with bodies exhibiting the most evident marks of emaciation and debility. Thus confirming a truth long known, that animal food is, in general, necessary to the due maintenance of bodily vigor in man.

Some years subsequently this subject was submitted to the examination of the Royal Society of Medicine; and we find in the volume of its Transactions for the years 1784 and 1785, a report in reply to the questions proposed by Marshal de Castries, minister of marine, relative to the nourishment of the crews of vessels. The authors of the report compared the mode of victualling the English and Dutch vessels of war. The English furnished theirs almost exclusively with salted meat, while the ordinary nourishment on board those of the Dutch was found to be dry vegetable substances. It is added that the crews of the English were most subject to scurvy, and that the disease caused among them greater ravages than among those of the former. They conclude that the substances which constitute the most healthy part of the nourishment employed by man, are the farinaceous, and hence it is the dry legumina that should

form the principal part of the diet of seamen. In general, they conceive that flesh is only a useful addition to this diet, as it aids the digestion and animalization of vegetable food. It is very probable that scurvy was found to be most frequent and severe on board the English than on board the Dutch ships; but it is not so certain that the difference in their diet was the cause of this. We have repeatedly seen the crews of vessels enter into port after long voyages, during which they have not been affected with scurvy, notwithstanding they had habitually eaten salted provision. But if the gentlemen who drew up the report referred to, had attributed the production of scurvy to salted meat badly preserved, or of an unwholesome quality, then should we have coincided in opinion with them. The dry leguminous seeds by which they propose to replace the salted food of seamen, are themselves objectionable. They are viscous and of difficult digestion: this is especially true of the dry beans so largely used at sea; while their hard skin defends them from the attack of insects, it prevents likewise the action upon them of the stomach. They possess no anti-scorbutic property. In preventing this disease they act negatively by taking the place of salted meats of a bad quality. Besides, when we consider the small quantity of nourishment contained in vegetable substances, convenient for the victualling of ships, especially in their dry state, when a great part of their mucilage is lost, and by undergoing a species of fermentation, their fecula, which is the part upon which their nourishment depends, is altered or destroyed, we shall see how little preference is to be accorded them over salted meats of a good quality, for the aliment of men subjected to the toils of a marine life. The observations of the officers and physicians of the navy were nevertheless the cause of some useful changes in the diet of the seamen. The heads and feet of the animals were rejected, as susceptible, when salted, of a rapid decomposition. Fish was likewise left out from the food of seamen, from its unwholesome properties and the disagreeable and injurious odor which it exhales in the vessels; and finally, the proportion of salted beef was diminished, and that of pork, the superiority of which had been tested, was increased. The manner of preparing these salted meats underwent, however, no change; a circumstance nevertheless exerting no little influence upon the vigor and health of those who partake of them.

"I had," remarks our author, "frequently observed, that beef when dried and hardened by salt, was deprived entirely of its nutritive properties. The flesh of pork, less solid, was therefore generally preferred; I, accordingly, with the consent of all, found fault with the bad choice made of the cattle slaughtered for the use of our ships." On examining into the manner of salting the meat, he discovered that a large amount of common salt was used, but no saltpetre, and a pretended anti-scorbutic mixture was added to each barrel of meat composed of alum, gum tragacanth, and madder, which latter accelerated an unwholesome change in the meat, and gave it a filthy and disgusting appearance. In consequence M. Keraudren obtained an official order directing the use of less salt, the addition of nitre, which besides preserving the meat gives it a pleasing vermilion tint, and the disuse of the anti-scorbutic mixture, in the preparation of the meat for the supply of the French navy.

The use, he remarks, of meat properly salted is not so unwholesome as has been supposed—it is not alone the cause of scurvy. Nevertheless, the means of preserving meat without the use of salt will be an important discovery. To this end the Society of Encouragement have proposed a prize; for which several essays have been offered. Appert suggested to partially cook the food whether vegetable or animal, and to put it afterwards in vases perfectly closed, and to be then immersed in water the heat of which is to be raised to the boiling point. In these vases, however, the substances were found to undergo more or

less change; and the plan is altogether incapable of being applied to the victualling of a ship or squadron. It affords, notwithstanding, an admirable means of preserving food for the sick, and in the French navy has been adopted for that purpose. Meat suspended in a current of air, dries without putrifying—but in European climates, when conducted as it must be in chambers or magazines, it acquires always a disagreeable flavor. When meat is exposed to a free current of air, the watery juices, which in its recent state cause its suppleness and increase its nutritive properties, evaporate, and it becomes dry and solid. When dried by heat it is the same. Meat thus prepared will not undergo putrefaction so long as it is kept from moisture. In drying, however, the meat, particularly beef, loses in great part its osmazone or that balsamic property to which it owes its taste, and which renders it so much the more digestible and nutritive. Meat when dried to a certain extent is likewise rendered more liable to imbibe the moisture of the atmosphere, and in this manner to become again susceptible of decomposition. If desiccation has been carried too far the animal fibre will not any longer admit the water, and will retain its hardness after boiling, so that it is impossible to cook it. The point to which the drying of the meat should be carried, therefore, is that which will be sufficient to prevent its undergoing any decomposition, while such a degree of hardening is avoided by which all its alimentary properties are destroyed. The hydrochlorate of soda (common salt) is perhaps the best agent by which to produce in meat the proper degree of dryness; that salt absorbing the fluids as they escape from the meat, while at the same time its anti-septic properties are indisputable. The heat of a stove, the action of drying substances, of oil, of vinegar, and of spices, are so many means for preserving meat, which can be employed only on small masses, and are not adapted to the preservation of large quantities. It is said that the Indians have recourse simply to the use of sugar for the preservation of animal substances, but in imitating their example the English have employed the sugar only in connection with common salt and saltpetre. It is then, after all, by salting alone, that we have it in our power to preserve for any length of time animal food, in a condition which renders it fit for the nourishment of man; and in quantities adapted to the victualling of an extensive population, of an army or a fleet.

In renouncing all other means of preserving animal food, however, it is not impossible to correct the acrid nature, and to augment the wholesome properties of salted provisions. By its admixture with vegetable substances, salted flesh becomes more fresh and less stimulating; and the dried vegetables being penetrated by the juice of the meat, become more succulent and nutritious.

In February, 1823, M. Keraudren made a report to a commission of which admiral Jacob was president, on this subject, in consequence of which, not only was the union of the dry leguminous vegetables with salted meat in the same ration directed to be observed in the navy, but every morning the men are furnished with a warm breakfast, adapted to the particular climate under which they are at the time. An arrangement, the effects of which have proved of the most pleasing character.

FENCES.—These should be righted and repaired immediately after the frost is out of the ground. It is very difficult to keep board fence from leaning, or blowing down, particularly in moist ground. This we should suppose might be remedied by having the posts much larger at the bottom, tapering towards the top. In this way there may be great economy in the posts. One as now used will make two that will be more than twice as serviceable. Posts do not decay at the top, but near the ground. Let the fence be as light as possible towards the top, in proportion to the bottom.—N. F. Farmer.

Prices Current in New York, April 27.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 11 a 13; Upland, 10 a 12; Alabama, 10 a 13. Cotton Bagging, Hemp, yd. 13 a 21; Flax, 13 a 14. Flax, American, 7 a 8. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.75 a 6.00; Balt. How'd st. 5.62 a 5.75; Rh'd city mills, 7.00 a —; country, 5.50 a 5.62; Alexandria, 5.50 a 5.62; Fredericksburg, 5.50 a —; Petersburg, 5.50 a —; Rye flour, 3.75 a 4.00; Indian meal, per bbl. 3.75 a —, per lhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. — a —; Rye, North, 80 a —; Corn, Vel. North, .73 a .75; Barley, .68 a .70; Oats, South and North, — a —; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.50 a 10.00; Potatoes, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.10; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, 7 a 9.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED. Also

MAMMOTH PUMPKIN SEED.

EARLIEST FRENCH CABBAGE do.

EARLY FRENCH, or PARIS WHITE ONION do.

ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

I. I. HITCHCOCK.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1 1/2 " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenths Durham Shorthorn very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.

Amer. Far. Office.

PUBLIC SALE OF DURHAM SHORTHORN-ED CATTLE AND HIGHLY IMPROVED SHEEP.

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEIFERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5,—81

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at 75 cents per bushel.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life,) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire—price \$150.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,

Ap. 26—11.

Amer. Farmer Establishment.

200,000 WHITE MULBERRY TREES.

The Subscriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the *Morus Multicaulis*, or Chinese White Mulberry.

ASA BUTLER,

Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12,—61.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville,) double Altheas, Honeysuckles, Corcorus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Scythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There are very few changes to notice in the produce market. A few sales of Howard street flour have been made at our quotations, though speculators generally decline dealing at above \$5.25, while holders generally prefer holding on unless they can get \$5.37 1/2. Fresh ground city mills sells readily at our rates.

TOBACCO.—Seconds, as in quality, 3 09 a 5 00; do. ground leaf, 5 09 a 9 00.—Crop, common, 3 00 a 5 00; brown and red 4 50 a 6 00; fine red, 6 00 a 8 00; wrappery, suitable for segars, 5 00 a 15 00; yellow and red, 9 00 a 15 00; yellow, 16 00 a 20 00.—Line yellow, 18 00 a 25 00.—Virginia, 4 00 a —.—Happahannock, 3 00 a 4 00.—Kentucky, 3 50 a 5 00. The inspections of the week comprise 837 lhd. Md.; 141 lhd. Ohio; 16 lhd. Vir. and 4 lhd. Penn.—total 1001 lhd.

Flour—best white wheat family, \$6.75 a 7.25; super Howard-street, 5.25 a 5.37 1/2; city mills, 5.37 1/2 a 5.50; city mills extra 5.50 a 5.75.—CORN MEAL bbl 3 62 1/2; GRASS, best red wheat, 1.15 a 1.20; white do 1.30 a 1.35; —CORN, white, 65 a —, yellow, 66 a —; —RYE, 74 a — —OATS, 37 1/2 a 41 —BRANS, 75 a 80 —PEAS, 65 a 70 —CLOVER-SILF 8.00 a — —TIMOTHY, — a — —ORCHAR Grass 3.00 a — —Tall Meadow Oat Grass 2.00 a 2.50 —Herd's — a — —Lucerne — a 37 1/2 lb. —BARLEY.—FRANKF. 1.50 a 1.62 —COTTON.—Va. 10 a 12 —Lou. 12 a 13 —Alab. 12 a 13 —Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12 1/2 —WASH. hds. 1st p. 29 1/2 — 2nd 28 1/2 — 3rd 27 1/2 — 4th 26 1/2 — 5th 25 1/2 — 6th 24 1/2 — 7th 23 1/2 — 8th 22 1/2 — 9th 21 1/2 — 10th 20 1/2 — 11th 19 1/2 — 12th 18 1/2 — 13th 17 1/2 — 14th 16 1/2 — 15th 15 1/2 — 16th 14 1/2 — 17th 13 1/2 — 18th 12 1/2 — 19th 11 1/2 — 20th 10 1/2 — 21st 9 1/2 — 22nd 8 1/2 — 23rd 7 1/2 — 24th 6 1/2 — 25th 5 1/2 — 26th 4 1/2 — 27th 3 1/2 — 28th 2 1/2 — 29th 1 1/2 — 30th 1/2 — 31st 1/4 — 32nd 1/8 — 33rd 1/16 — 34th 1/32 — 35th 1/64 — 36th 1/128 — 37th 1/256 — 38th 1/512 — 39th 1/1024 — 40th 1/2048 — 41st 1/4096 — 42nd 1/8192 — 43rd 1/16384 — 44th 1/32768 — 45th 1/65536 — 46th 1/131072 — 47th 1/262144 — 48th 1/524288 — 49th 1/1048576 — 50th 1/2097152 — 51st 1/4194304 — 52nd 1/8388608 — 53rd 1/16777216 — 54th 1/33554432 — 55th 1/67108864 — 56th 1/134217728 — 57th 1/268435456 — 58th 1/536870912 — 59th 1/1073741824 — 60th 1/2147483648 — 61st 1/4294967296 — 62nd 1/8589934592 — 63rd 1/17179869184 — 64th 1/34359738368 — 65th 1/68719476736 — 66th 1/137438953472 — 67th 1/274877906944 — 68th 1/549755813888 — 69th 1/1099511627776 — 70th 1/2199023255552 — 71st 1/4398046511104 — 72nd 1/8796093022208 — 73rd 1/17592186044416 — 74th 1/35184372088832 — 75th 1/70368744177664 — 76th 1/140737488355328 — 77th 1/281474976710656 — 78th 1/562949953421312 — 79th 1/1125899906842624 — 80th 1/2251799813685248 — 81st 1/4503599627370496 — 82nd 1/9007199254740992 — 83rd 1/18014398509481984 — 84th 1/36028797018963968 — 85th 1/72057594037927936 — 86th 1/144115188075855872 — 87th 1/288230376151711744 — 88th 1/576460752303423488 — 89th 1/1152921504606846976 — 90th 1/2305843009213693952 — 91st 1/4611686018427387904 — 92nd 1/9223372036854775808 — 93rd 1/18446744073709551616 — 94th 1/36893488147419103232 — 95th 1/73786976294838206464 — 96th 1/147573952589676412928 — 97th 1/295147905179352825856 — 98th 1/590295810358705651712 — 99th 1/1180591620717411303424 — 100th 1/2361183241434822606848 — 101st 1/4722366482869645213696 — 102nd 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THE FARMER.

BALTIMORE, FRIDAY, MAY 10, 1833.

THE DROUGHT—We have never known so long and severe a drought at this season of the year, as that which is at present parching the earth in this vicinity. It is upwards of three weeks, since we have had any rain, and double that time since the earth has been even tolerably moistened. All early vegetables are suffering greatly, and if prompt relief, in the shape of copious rains, is not soon received, all will be lost. The grain crops appear to be doing tolerably well. The drought appears to be as severe at the south and east of the Allegany mountains, generally, as with us. The following paragraphs show the state of the weather in the north:

FIRES IN THE WOODS.—A letter from Saratoga county, dated the 2d inst. says, "It is exceedingly dry in all this region. I learn that fires are raging extensively in the woods on Lake Champlain."—Another letter of the same date from Green county, mentions that much damage has been caused by fires in that and Sullivan county.

Brattleboro', Vt. April 30.

THE WEATHER.—At the date of the present writing, (12 o'clock, noon, April 30,) our entire stock of living animals, man and beast, is in a suffering condition from the unexampled warmth and sultriness of the weather. For some time past the season has been uncommonly dry, and at this time it appears as if the sun was about to lick up the last drop of moisture which lingers in our parched fields. We heard yesterday of five instances in which cattle at work dropped down and expired under the effects of heat, and there is reason to fear that the mortality among cattle from that cause has been very extensive. The mercury in the thermometer stood yesterday at noon at eighty-five degrees, and it is now at eighty-four.

Montreal, April 30, 1833.

Yesterday the heat was as powerful as might be expected in the dog-days; the thermometer averaged 85 in the shade, with an oppressive hot wind, rendered more disagreeable by the dust with which every pedestrian was enveloped. We never recollect a day of such steady and inconvenient warmth in the fickle month of April. This day the transition has been equally sudden, the thermometer scarcely reaching 50, the wind boisterous and cold, but the dust scarcely less unpleasant.—*Gaz.*

THE ORIENTAL CYPRESS TREE.

The Editor of the American Farmer is much indebted to Mr. Skinner for the following letter from Cum. Porter.

DEAR SKINNER:

Pera, Jan. 30, 1833.

I send you some of the seeds of the oriental cypress tree, with which the Turkish cemeteries are decorated and embellished. They are now at perfect maturity. I had them collected yesterday.

I have sent some to the Horticultural Society of Massachusetts, where, I have no doubt, they will be properly disposed of. Those inclosed I beg you to distribute; as perhaps the climate of Maryland will be better adapted to them than that of Massachusetts, though I have no doubt that the tree will flourish in both.

Every body has read of the beautiful and extensive cemeteries of Pentari, of Pera and Constantinople. It is to this tree they owe their beauty. It is not worth while to go into a minute description of it. It is sufficient to say, that it is the most appropriate tree for grave yards; and, as the question has been agitated in some of our papers, how our grave yards should be ornamented, I send these seeds.

The tree is an evergreen; the top of a beautiful

elongated conical form. It grows to a goodly size, and of an enormous height, as thick as they can stand; and may be propagated from cuttings as big round as the leg or arm.

I never pass one of our grave yards without a kind of horror at the idea of being deposited there. I never enter a Turkish cemetery without feeling gay where all is gaiety; for they are places of resort for amusement of Turks, Jews and Christians. There is no place more gay of a summer evening than the *Champ des Morts de Pera*. This is all owing to the cypress tree. With us, the deserted and neglected grave yard keeps us in constant terror of death. Here death has no such horrors; the lovely groves of the cypress and the gaiety of the place reconcile us to it. Whether it is best, to live in constant dread of death, or to be perfectly familiar and reconciled with it? If the latter, decorate the grave yard and plant the oriental cypress: *the grave will lose its victory, and death his sting.*

Yours, truly,

DAVID PORTER.

P. S. Pray, how did you dispose of the pine seed? If those I sent you failed, let me know, that I may send you more. They make great use of them here in all their cookery and confectionary. They are "delightful," as good Mrs. F. used to say, and I hope still lives to say.

[None of the seeds of the stone pine vegetated.—*Ed. Am. Farmer.*]

BARNEY'S BAKEWELL SHEEP.

EXTRACT OF A LETTER DATED,

Girard Farm, near Philadelphia, }
April 30, 1833. }

"I feel more than ever assured, that my stock of sheep is well worth the attention of any gentleman wishing to improve their flocks of sheep, particularly so, when I have had the gratifying statement from a man of veracity, whom I directed to purchase sheep for me in England. He is of high standing, and a good judge—and after looking over a large part of the sheep districts of England, the last fall and winter, for the purpose of purchasing, he arrived in the packet ship *Montezuma*, the 17th inst. and tells me on his word and honor, he could not find any better, or as good as those I have already, so that he concluded not to bring any with him. I had sixteen wethers slaughtered in Philadelphia, last January—allowed by the best judges to be the best and fattest ever killed for that market—two saddles sent to New York, and one sheep to Washington; and as far as I have heard, every good judge of the quality of sheep and mutton, pronounced them the best they have seen.

"JOHN BARNEY."

RURAL LABOR

BENEFICIAL TO PROFESSIONAL MEN.

A clergyman residing in the northeast part of Mass. in a letter to one of the editors, thus speaks in the commendation of rural labor; "I cultivate but a small piece, and this only as a matter of taste and amusement. I think the personal attention which I have given to my garden has been of the highest benefit to my health; and thereby enabled me to go through labors connected with my business which I should otherwise never have been able to perform. I spoke of cultivating as a matter of taste and convenience. I ought to say, that as my trees and vines come forward, I begin to realize the truth of the adage, that 'in all labor there is certain profit.' And I cannot refrain from observing how different would be the situation of any clergyman, I may add lawyers, physicians, merchants and mechanics, would they from the commencement of business direct some of their leisure hours to the cultivation of a garden and a fruit lot."

This worthy man (and he is not the only one of the profession that is in this way worthy) has done much to awaken a taste for improvement in rural

labor among his flock; and we have read with interest his communications to the Agricultural Society of his county. Such a man is pre eminently useful; and we publish the extract without permission, in hope that his example may be profitable to others. The clergy certainly have it in their power to improve the temporal as well as spiritual interests of those around, and nothing goes further in either than good example.

COBBETT'S COTTAGE ECONOMY.—Cobbett is one of the best writers of English now living, and whatever subject he writes upon, he is sure to win the reader's attention. Open this book where you please, and if you begin to read a paragraph, the chances are ten to one, or as a rata-baga to a grain of mustard seed you will not stop till you finish it. Take this for an experiment.

MUSTARD.—Why buy this when you can grow it in your garden? The stuff you buy is half drugs and is injurious to health. A yard square of ground sown with common mustard, the crop of which you would grind for use, in a little mustard mill, as you wanted it, would save you some money, and probably save your life. Your mustard would look brown instead of yellow; but the former color is as good as the latter; and, as to taste, the real mustard has, certainly, a much better than that of the drugs and flour which go under the name of mustard. Let any one try it, and I am sure he will never use the drugs again.—The drugs, if you take them freely leave a burning at the pit of your stomach, which the real mustard does not.—*Boston Courier.*

(From the York Republican.)

PROSPECT OF THE WHEAT CROP.

A ten days' jaunt across Frederick and Washington counties, in Maryland, and into the upper part of Virginia, gave us an opportunity of observing the very fine region of country with which the citizens of that section are blessed. We could not but regret the slovenly appearance of the wheat fields, with but rare exceptions. This evil arises from their system of large landholding, and sowing wheat upon corn ground. Many of their wheat fields present bare stripes every twenty feet, which extend across them, and are caused by setting their corn or tops upon the ground, and not having or taking time to remove them; and thus so much ground is lost by being left unsown and unploughed. Upon the whole, although these citizens of our common country are equally blessed with us in the possession of as fine rich lands as any in the world, yet for the causes above mentioned, their farms do not present the thrifty and neat appearance of the good lands east of them. Indeed, within a few weeks past, we have had opportunities of seeing the condition of the wheat prospect in parts of Chester, Lancaster and York, in Pennsylvania; of Frederick, Washington and Baltimore counties, in Maryland; and also a part of Virginia, and no where does it present so promising an appearance as in this county: and further, we may say, without boasting, that no where did we see so beautiful a valley as that in which we reside. Its high state of cultivation, its extraordinary fertility, and above all, its beautiful prospects and salubrity, render it most certainly a place where our first parents might contentedly have dwelt.

SEWING ON GLAZED CALICO.—By passing a cake of white soap a few times over a piece of glazed calico, or any other stiffened material, the needle will penetrate with equal facility as it would through any other kind of work. The patronesses of the School of Industry pronounce this to be a fact worth knowing; the destruction of needles in the ordinary way occasioning both loss of time and money.—*Taunton (Eng.) Courier.*

The heart, by its muscular contraction, distributes two ounces of blood from seventy to eighty times in a minute.

AGRICULTURE.

(From the New England Farmer.)

AN ADDRESS

Delivered before the Worcester Agricultural Society, October 10, 1832; being their Fourteenth Anniversary Cattle Show and Exhibition of Manufactures. By WALDO FLINT, ESQ.

Agriculture, in its simplest form, was probably the first, and it is undoubtedly the most important, occupation of man. It lies, in fact, at the foundation of civilized society. The spontaneous productions of the earth, especially when aided by contributions from the air and the deep, may, indeed, afford a precarious subsistence for a small population, scattered over a wide extent of territory; but still, man, without other and surer means of support, ever has been, and ever must be, savage man. The degree of civilization and refinement to which any tribe or nation of men may have attained, may be pretty accurately measured by the advance they have made in the agricultural art. I do not mean of course, to be understood as saying, that agriculture can flourish alone, without the aid of the mechanic arts, but I do mean to say, that while all the arts mutually aid and assist each other, agriculture must take the lead in the march of improvement.

Hence we find, that under all well ordered governments, its improvement has always been an object of peculiar interest and regard. What raised ancient Egypt to the height of her grandeur? Not the fertility of her soil alone, enriched as it was by the overflowings of the Nile; a rich soil is no blessing to an idle population. It was the laborious industry of her inhabitants, encouraged and protected by sound maxims of state policy, which made her the granary of the world. The Nile has continued, down to the present time, to make its annual contributions, and, while the monuments of her foolish pride still stand the wonders of the world, her fertile plains are trampled upon by the feet of reckless barbarians.

Rome, too, in her best days, was not less distinguished by her skill in the peaceful arts, than for her military prowess. Her best military commanders were also her best practical farmers; and "to neglect the cultivation of a farm was by them considered an offence, which merited the chastisement of the censor."

When the great northern Hive sent forth its swarms of barbarians to ravage and possess the provinces of the Roman empire, agriculture not only fell into neglect, but came to be considered a *menial* occupation. The only honorable profession, in those unsettled times, was that of arms. The lands were hunted out by the conquering generals, in large districts, among their favorite officers, who again subdivided them among their followers, and all were held, originally, on the condition of rendering military service to their respective superiors. Those who were employed in husbandry, were liable to be called away, at any moment, from their business, to attend upon their huge lords, and it can be no matter of wonder, therefore, that the art should have become nearly extinct.

When in the progress of time, the temper of the people had become more peaceful, and the tenure, by which estates were held, more secure, agriculture began again to revive. But, then, out of the feudal system, to which I have just referred, arose the laws of primogeniture and entails, by which family dignity and pride were to be sustained at the expense of justice and sound policy,—the evil effects of which on agricultural improvement are felt, even in the most enlightened states of Europe, at the present day.

Agriculture has never, since the fall of the Roman empire, or at least never until recently, except perhaps in China and some other portions of Asia, assumed its proper rank among the arts of life. It has generally been considered an occupation requiring less of science and skill, than almost any other art. It is

true, the mere manual labor on a farm does not call for extraordinary skill; but to superintend and control all the various operations of farming, so as to make it a profitable business,—to adapt the crop to the soil and the climate,—to provide for contingencies and change the mode of cultivation, when circumstances require it,—all this, it seems to me, demands great judgment and discretion, as well as much science and skill. Dexterity or expertness is all that is necessary in many of the mechanic trades, and this may be acquired by practice. So practice will generally make a good mower, a good reaper, a good ploughman, but neither of these, nor all combined, will alone constitute a good farmer. In agriculture, *nature* produces every thing, and it is the business of the husbandman to direct her operations. He cannot, as may be done in some of the mechanic trades, follow on, year after year, in any one beaten track. He must study, and study diligently, the nature of the soil he has to deal with; he must watch its changes, and trace these changes, if he can, up to their causes; so that he may learn how to preserve his lands in health, or, if they become diseased, what remedy to apply in order to restore them. Every year's observation should add something to his stock of knowledge. The productiveness of the earth is influenced by a great variety of circumstances, which wholly escape the notice of the careless observer; and the farmer who should, in spite of experience, persist in cultivating his lands in a particular manner, either because his father did so before him, or because he may himself have found his course of husbandry profitable under different circumstances, would be very like the physician who should, on all occasions, turn to his book of recipes and make out his prescriptions, without studying the constitutions, and inquiring into the particular habits of his patients.

In order to be accomplished in the art, the farmer should have some acquaintance with the *science* of husbandry. Not that every farmer is expected to be a philosopher, and "understand all mysteries and all knowledge;" but he ought, certainly, to know something of the compositions of soils and of the nature and properties of the different kinds of manures, that he may be better able to judge what substances are wanted to preserve or increase the fertility of his lands. This he may indeed learn from experience, and experience, after all, is the farmer's only sure guide; but reading will supply him with hints which he may find exceedingly useful in conducting his own experiments. The practical agriculturist, I know, has little leisure for study; but he can find time enough, every week in the year, to read the *New England Farmer*; and the long winter evenings will afford him leisure, if he choose so to employ them, to become acquainted with more voluminous publications on the subject. I have said, *experience* is the farmer's only sure guide; but he will not be governed by his own experience merely. He will avail himself of the experience of his neighbors also; and will adopt in the management of his own farm, any improvements which they may have introduced in the culture of theirs. For the same reason, he should enlarge the circle of his inquiries, not confining himself to his own town, or state, or country. The farming tools and agricultural operations of Great Britain are very similar, in most particulars, to those of the United States, and many valuable treatises on the subject have been published there, which are now accessible to the American farmer. Some of these will give him much useful information; and his own good sense will teach him to adopt or reject their mode of husbandry, as he may find the same applicable or otherwise to the condition of our own country.

In this country, from its first settlement, agriculture has always been considered an honorable, as well as most useful occupation. Indeed, up to the time of the revolution, it constituted almost the sole employment of the inhabitants. Manufactures, except the common household manufactures which are

found in all new settlements, there were none: of commerce, there was next to nothing; and I cannot learn, that any of the most common mechanic arts were cultivated any farther than was absolutely necessary. It was the policy of the mother country to supply her colonies with every article which she could make at home. Her motherly kindness went even farther: she could not consent that her children here should have the trouble even of transporting the articles which her bounty supplied them with. And, in return for all this goodness, she only required that they should pay her liberally for her goods and their freight, in any articles of produce which she wanted and could not raise on that portion of the farm which she carried on herself. I take the liberty to quote the preamble to an act of Parliament, passed 1663, for the purpose of presenting, in a clear light, her disinterested regard for the prosperity and welfare of her colonies.

"In regard to his majesty's plantations beyond seas, are inhabited and peopled by his subjects of this his kingdom of England—for the maintaining a greater kindness and correspondence between them, and keeping them in a firmer dependence upon it, and rendering them yet more beneficial and advantageous unto it, in the further employment and increase of English shipping and seamen—vent of English woollens and other manufactures and commodities, and making this kingdom a staple, not only of the commodities of these plantations, but also of the commodities of other countries and places, for the supplying of them. Be it enacted," &c. "The only use and advantage of American Colonies and West India Islands," it was said, "was the monopoly of their consumption and the carriage of their produce." England has continued, even since partition was made and the late colonists have managed their portion of the farm in their own way, to manifest the same watchful care over the interests of her children. She says now, as she always used to say, that it is giving ourselves quite too much trouble to manufacture our own clothing, and is perfectly willing and ready to supply us with whatever we want in that line, ready made; and will take, in exchange, our cotton, rice, tobacco, and indeed, any thing else, which she must have and cannot raise for the supply of her own wants. She has allowed us, occasionally, to truck a little with her West India Islands, when they have chanced to be in a state of starvation; and has recently consented that we may go there when we please, without molestation; on certain *conditions*, however, which, as some think, give her the best end of the bargain.

But I have dwelt longer, than I purposed, on the Colonial policy of England. I intended only to have made a passing remark—that the policy, she adopted in relation to these colonies, with the expectation of making them more dependent upon her, and of hindering them more closely to her, was, probably, the best which could have been devised, to prepare them, in due time, to assert and achieve their independence. Had they been left free to push their fortunes in any channel, into which inclination might have led them, it is a fair presumption, that they might have remained, to this hour, an appendage of the British Empire. The Fathers of New England came to these shores deeply imbued with the love of liberty,—"not like other men, whom small things could discourage or small discontents cause to wish themselves at home again," and the employments, in which they here engaged, were well calculated to fix and perpetuate this sentiment in their hearts and in the hearts of their children, while at the same time, they gave them the nerve and the muscle, which were necessary to brace them for the contest.

When our independence was established and the country had, in some measure, recovered from the effect of her seven years' struggle to secure it, a thousand new channels were opened to the enterprise of our citizens. Large fortunes were, occasionally, accumulated in the course of a few years, and the young

and active and enterprising were tempted by the prospect of wealth, quickly, and as they supposed easily, acquired to engage in foreign commerce or domestic trade rather than to secure a competency by agricultural pursuits, in which their gains, though more certain, would be less rapid.

An old English writer defines *English* gentlemen thus—"As for gentlemen, they be made good cheap in this kingdom; for whosoever studieth the laws of the realm; who studieth in the universities, who professeth the liberal sciences, and to be short, who can live idly and without manual labor, he shall be called master, and shall be taken for a gentleman." In this country; for a while subsequent to the time of which I have spoken, the feeling, I suspect, was common with too many, that it was more respectable to live by one's wits, than by manual labor; as if honest industry could ever fail to secure esteem and command respect! The young men were too easily persuaded, by the prospect of light labor and great gains, to desert the country for the city, where, if they were fortunate enough to preserve their moral purity in the midst of temptations, the chances were greatly against their attaining the object of their desires. It may be safely asserted, that the industrious and economical farmer or mechanic is sure of a competency, in this country, while in the possession of health. But let a man walk through the business streets of one of our commercial cities, and after the lapse of ten or even five years, let him return and take his walk again through the same streets, and inquire what proportion of the former occupants are still there, prospering in business, and he will, probably be surprised to learn, that there are so great uncertainties in trade. I have heard it estimated by persons of observation, and competent to form a correct opinion on the subject, that of the young gentlemen who commence in the metropolis of our own state, not one in five meets with so much success as to induce him to continue his business. The career of many early terminates in bankruptcy, and of these, notwithstanding the well known liberality of the merchants of that city in discharging from further liability those who honestly surrender their property for distribution among their creditors; not a few continue, for the remainder of their lives, in a state of penurious embarrassment, which necessarily precludes them from obtaining any thing more than a bare subsistence. The same kind, though not the same degree, of uncertainty attends the business of merchandizing in the country. The reason is obvious; the merchant or trader necessarily deals much on credit, and if his business is large, his credits must be proportionably extensive; so that he stands responsible not only for his own honesty and good management, but for the skill and integrity of his customers. It is not thus with the farmer. His debts may, indeed, refuse or be unable to pay, but his lands cannot take wings and fly away. They at least will stand fast; and he has the sure word of Providence, that seed time and harvest shall never fail. He deals with fewer individuals than the merchant or mechanic, and can, more easily than they, select his own customers. The productions of a farm, too, are always saleable at fair market prices; for man must eat, though he will not work, and can no more

—"cloy the hungry edge of appetite,"

"By bare imagination of a feast,"

Than "he can hold a fire in his hand,

"By thinking on the frosty Caucasus."

Besides, there is seldom any necessity, that the farmer in New England, should sell on credit, unless he choose to run the risk of loss for the sake of getting something above the market price for his commodities. Neither can he be subjected to much expense or loss of time in sending his produce to market; for the busy manufacturing villages, which are springing up on every hand around us, as it were, by enchantment, will always furnish him, if they are suffered to con-

tinue and prosper, with cash customers for all his surplus productions.

If money, then, be not the supreme good; if health and a competency are to be preferred to greater wealth, earned as it often must be, by anxious days and sleepless nights, let not the farmer repine at his lot. He may work harder than some who are engaged in other pursuits; but his sleep will be more sound and refreshing. He may not be able, after a life of industry, to point to heaps of hoarded gold, as the fruit of his labors; but, if true to himself and duty, he will leave a better legacy to his children. They will have been trained up to habits of industry, temperance, sobriety, virtue, and he will himself be gathered to his fathers a shock of corn fully ripe."

I have gone on the assumption, that the profits arising from agriculture, though more certain, are not so great as those derived from some other branches of industry. It would appear, however, from a document published among the Collections of the Historical Society, that there *was* a time, immediately after the settlement of our ancestors at Salem, when the farmer could have had no good cause for complaint, either on account of the barrenness of the soil, or the smallness of his profits. It is entitled "A short and true Description of the Commodities and Dis-commodities of New England's Plantation, written in the year 1629, by Mr. Higgeson, a reverend Divine, now there resident." "The fertility of the soyle," says Mr. Higgeson; "is to be admired at, as appeareth in the abundance of grasse, that groweth everie where, both verie thicke, verie long, and verie high in divers places.—It is scarce to bee beleaved how our kine and goates, horses and hogges, doe thrive and prosper here and like well this country. But the abundant encrease of corne proves this country to bee a wonderment.—Thirtie, fortie, fittie, sixtie are ordinarie here; yea, Joseph's encrease in Egypt is out-strippt here with us. Our planters hope to have more than a hundred fould this yere,—and all this while I am within compassse. What will you say of two hundred fould and upwards? It is almost incredible what great gaine some of our English planters have had by our Indian corne. Credible persons have assured me, and the partie himselfe avouched the truth of it to me, that of the setting of 13 gallons of corne bee hath had encrease of it 52 hogsheads, every hogshead holding seven bushels of London measure, and everie bushel was by him sold and trusted to the Indians for so much beaver as was worth 18s. and so of this 13 gal. of corne, which was worth 6s. 8d. he made about 327 pounds of it the yere following, as by reckoning will appeare: where you may see, how God blessed husbandry in this land."

Nor was the fertility of the soil the only thing in the country, about those days to be admired at. The astonishing increase of population might equally well prove it to be a wonderment. At a General Court holden only five years after the settlement of Boston—"Roxbury and Watertown had leave to remove, whether they pleased, so as they continued under this government." "And the occasion of their desire to remove," as Gov. Winthrop's Journal informs us, "was—for that all the towns in the bay began to be much straitened by their own nearness to one another, and their cattle being so much increased." I have already made the remark, that agriculture has always been regarded in this country as an object of special interest. The vast extent of our territory, much of which is yet to be peopled by civilized men—embracing almost all varieties of soil and climate, and capable of yielding almost all the known productions of the earth seems to indicate, that this is to constitute the great business of its inhabitants. The sparseness of our population, compared with that of most countries of the old world, and the consequent low price of land and high price of labor have hitherto prevented our pushing the art to a high degree of perfection.—Where land is high and labor cheap, the true policy is to make the land produce to the full extent of its

ability. Our policy, on the contrary, has been to make the most we could of *labor*. The population of our own state has now become so dense, and the price of land so much increased, that our interest requires, that we should be making progress in agricultural skill, unless we are willing to be undersold, in our own markets, by those whose lands cost less than ours and who happen to have a more kindly soil to cultivate. Much has been accomplished within the last few years. The formation of Agricultural Societies, and the introduction of Cattle Shows among us, have already produced very important results, and, probably, in no section of our Commonwealth, have the advantages, to be derived from them, been more distinctly manifested than in our own country. We pride ourselves—and we are, sometimes, perhaps, a little more boastful on this subject than is quite becoming our modesty—in being able to make as goodly an exhibition of cattle as can be made in any other county. That we are able to make so fair an exhibition—is to be attributed mainly, I think, to our annual Cattle Shows. They afford us all an opportunity of seeing a variety of breeds together, and of comparing them with each other, and of forming an opinion of their comparative merits. An improvement perhaps even greater, has been made in our sheep, and one still more striking in our swine. The products of our dairies, too, though they have, for many years sustained a high reputation, have fully kept up with the improvements of the age. Our farming tools have undergone a similar change. The plough, the shovel, the hoe, are all much more convenient and effective, as well as more slightly implements than they were only a few years since. The whole aspect of things is changed for the better, as must be apparent to every person who merely passes through the country. Larger and more commodious barns are seen rising on the ruins of the old ones.—Dilapidated fences, prostrate gates, broken barn doors, creaking mournfully on a single hinge, are now comparatively rare occurrences, and we are beginning to learn, that there is no economy in turning out our cattle and our hogs (would, that I could say, geese, also,) into the highways, to pick up a miserable living at the expense, and to the great annoyance of the public. An air of neatness and comfort about our farms and farm-houses, is beginning to be more generally valued and cultivated.

But notwithstanding all our boasted improvements, and though we live, as every body says, in a most "extraordinary age," I cannot but think, that our ancestors had in some respects, much more correct notions of what is comfortable than any of their descendants. Who does not love to visit, on a warm summer's day, some of our oldest agricultural towns, and enjoy the coolness and serenity, which are every where to be found beneath the shade of their wide-spreading elms? It is very much the fashion with us, to erect our houses on the highest points of our own high hills, and there they are too often suffered to stand in solitary grandeur, without so much as a single tree of any kind to guard them against the burning suns of summer or the driving storms of winter. Without regard to appearances, without regard to personal comfort, it does seem to me, that economy alone, a bare wish to save money, should be a sufficient inducement to us to plant forest trees in the neighborhood of our houses and out-buildings. They absolutely cost nothing. Every farmer's wood-lot will furnish him with all the necessary varieties, and a few hours' labor, on a lowering day, in transplanting them, and a very little attention afterwards in guarding them from injury while young, are all that is wanting to insure their growth. They will furnish a refreshing shade both for man and beast, during the noon-tide hours of heat and rest from labor; they will give an agreeable coolness to our houses in summer and will add to their warmth in winter, beside saving many a little charge for broken windows and shattered window blinds.

In another particular, I think, we have not followed up the example set us by our forefathers—I mean, in the cultivation of fruit trees. I am happy, however, to admit, that we have been of late improving in this respect. Great praise is due to the Massachusetts Horticultural Society, and to individuals in our own neighborhood, for their exertions to excite a deeper interest in this department of agriculture.—Very considerable sums are annually expended for foreign fruits, when at a trifling expense of time and money, we might supply our tables with fruits of the choicest flavor of our own raising. There is great practical good sense in the dying advice of the Laird of Dumbredikes to his son Jock: “When ye hae naithing else to do, ye may be aye sticking in a tree; it will be growing, Jock, when ye’er sleeping. My father tauld me sae forty years sin’, but I ne’er fand time to mind him.” And the advice which follows, though not altogether apposite to the subject under consideration, is certainly not less valuable: “Ne’er drink brandy in the morning Jock; it files the stamack sair.” It is sometimes said by way of excuse for not cultivating fruit-bearing trees and vines, &c. that there is little use in attempting it, inasmuch as the fruit will certainly be appropriated by those, who have not had the trouble and expense of raising it.—I know that petty larcenies of this sort are quite too common, and it is a lamentable fact, that individuals are sometimes concerned in this miserable work of darkness, who would claim the reputation of being, in their ordinary transactions, at least, “indifferent honest.” I have noticed that associations have been formed in some towns for the purpose of detecting such midnight depredators, and they will undoubtedly produce beneficial effects. Let pains be taken to bring the guilty to exemplary punishment, and the offence will soon cease to exist. At all events, let every man, who has land suitable for the purpose, when he has nothing else to do, be sticking in a tree, and, in the course of a very few years, fruit will become so common, that any man however depraved he may be, will be *ashamed* to steal it.

There is another subject, to which I would beg leave to call the particular attention of this Society—the preservation of wood lots. In many of our towns, and particularly in those where factories are located, the price of wood has risen, within the last ten years, twenty-five and even up to fifty per cent. Fuel has already become a very important item in the expenses of a family. I am not prepared to point out what should be done, but the last winter’s experience should admonish us; that all reasonable care ought to be taken to prevent the waste and destruction of an article, which is becoming yearly of more and more consequence. It is a subject alike interesting to buyer and seller. I have thought, that the owners of wood lots have, in some instances, been too anxious to realize an immediate income, and for the sake of present gains, have sacrificed much larger profits in prospect. I have thought, also, that, after a lot has been cut over, sufficient care has not always been taken, by fencing and other means, to preserve the new growth from injury. I am not competent, however, to give advice; but have felt it to be my duty to suggest this subject, as being one, in my opinion, of primary importance, for the consideration of those who understand it better than I do.

The prospects of the farmer in New England, were never, probably, more encouraging than at the present time. His Indian corn may, occasionally, be injured by an early frost, as it has been in some places this year, and as it has been in former years; but he may look forward, as it seems to me, with confidence, to a course of continued and increasing prosperity. The policy of our government in relation to the protection of American industry, it is to be hoped, is now settled; and as long as our manufacturers are able to realize a fair profit in their business, so long the farmer will find a ready market for his produce at fair prices. The interests of agriculture and manufactures, in

this section of our country, it cannot be doubted, are inseparably connected. The facilities for communication and transportation, which public spirited individuals are now opening to us, by the construction of rail roads, will greatly promote the interests of these important branches of industry. The road, which is already commenced, will place us by the cheapness and quickness of transportation, almost in the immediate vicinity of our metropolis; and another, which has been recently surveyed by enterprising citizens of a neighboring state, and which, there is good reason to expect, may, in due time, be located and constructed, will bring us into close connection with Long Island Sound. If any man can possibly doubt the advantages of an easy and cheap communication, to all branches of business, I would advise such an one to take another view of the beautiful village where we are now assembled, and then to follow the course of the Blackstone Canal to its termination at Providence, in order that his doubts may be removed. Massachusetts, though she has manifested some reluctance to engaging in public improvements of this description, and has permitted other States to get far in advance of her, will not, we trust, now that she has fairly set herself at work, be wanting in the enterprize and zeal, which are necessary to carry them forward into full and successful operation.

I have alluded in the course of my rambling remarks, to some of the moral influences of agricultural pursuits; and though I may, perhaps, have trespassed already too long on your patience, I cannot forbear to ask your indulgence for a very few additional remarks on this interesting part of the subject.

It is recorded of King Numa, “that he introduced among his subjects, an attachment to agriculture as a charm of Peace;” for, says Plutarch, “no occupation implants so speedily and effectual a love of peace, as a country life; where, without diminishing the courage and bravery necessary to defend property, the temptations to injustice and avarice are removed.”

We accordingly find, that in his reign, the temple of Janus was closed—an occurrence which, with a single exception, happened not again during the lapse of seven centuries. Nor is this peaceful disposition confined to intercourse with foreign nations. In the daily intercourse of citizens of the same State, town, neighborhood, the same disposition among the tillers of the ground is, I think, equally apparent. There is among them more of harmony and good feeling—less of personal envying and strife, and less of party discord and bitterness, than is to be found in any other profession.

Another advantage of agricultural pursuits is their happy adaptation to the formation of virtuous habits. It has been said—“An undevout astronomer is mad!” He, whose business it is to study the far-off worlds in the firmament above us—

“Observe how system into system runs,
What other planets circle other suns;”—

is to be called a mad-man, because he fails to recognize, in the wonders of nature, the existence of an all-wise Creator and Disposer—what can we say of the *infidel farmer*, whose whole intercourse is with nature in what we are wont to consider her simplest forms, and yet he cannot tell, how a single one of all earth’s various products, which he gathers into his store house, is made to grow! Surely, if true devotion is any where to be found on earth, we should expect it to burn bright and pure on the farmer’s family altar.

Again, where shall we look for genuine patriotism,—pure, unadulterated love of country? Where, if not among the independent yeomanry of the country? “The merchant,” says Adam Smith, “is not necessarily the citizen of any particular country. It is, in a great measure, indifferent to him, from what place he carries on his trade; and a very trifling disgust will make him remove his capital, and together with it all the industry which it supports, from one country

to another. No part of it can be said to belong to any particular country, till it has been spread, as it were, over the face of that country, either in buildings, or in the lasting improvements of land.” The same may be said, perhaps, with equal truth, of all other professions, except that of agriculture. The home of the farmer is on the soil which he owns, and which he cultivates for the support of himself and his family. There he expects to live, and there he expects to die, and there he hopes, will be found his descendants through a long succession of generations.

How deep, then, the interest he must feel in the welfare of his country;—how intense the desire, that she may continue to be free, and prosperous, and happy; and with what melancholy forebodings, must he witness the first gathering of clouds which threaten her with ruin!

Such clouds may now be seen rising above our political horizon. Sentiments at war with the fundamental principles of our Union are, in one section of our country, openly avowed and advocated. If they shall gain currency and spread extensively among us, the oldest of us, now here assembled, may live long enough to listen to the knell of his country’s liberty and to exclaim,—

“Had I but died an hour before this chance,
I had lived a blessed time —”

But let us hope better things. Our fathers would start from their graves, and cry—shame upon us!—There must be—there *must* be a redeeming spirit, which will save us from such utter infamy.

HORTICULTURE.

EXTRACTS

From the “*Historical and Descriptive Account of British India.*”

Our knowledge of Indian vegetation, although extending itself with a rapidity almost unexampled in the botanical history of any country, is yet extremely limited. Nor can this be a matter for surprise when we call to mind the prodigious extent of our Asiatic possessions, reaching as they do from within six degrees of the equinoctial line to the thirty-fifth degree of northern latitude, with a range of temperature from that of the torrid zone to regions of perpetual snow.

It is extremely difficult to form an estimate of the probable extent of the Indian flora, the vegetation of many parts of the country being entirely unknown, and almost every where very imperfectly explored. In fact, in the remote districts, little more has been done than to follow the courses of rivers. The herbarium in the museum of the East India Company contains about nine thousand species, including those known and described by Roxburg in his manuscript catalogue, most of which were at that time new.—Tu this amount remain to be added a considerable number of species in the collection of Dr. Wight.—It is the opinion of the latter gentleman, that when he returns to India he shall be able to collect as many species in the presidency of Madras alone as we possess at present from the whole of our possessions there. Dr. Wallich obtained, from his own personal exertions in the valley of Nepal, and within an area of about sixty miles in circumference, upwards of two thousand five hundred species. Twelve months was the space of time devoted to this labor, and it cannot be supposed that he succeeded in discovering all the vegetable productions of that district. From these and other data, it has been calculated by Dr. Wallich that we are not acquainted, at the present moment, with more than the eighth part of the flora of India; an estimate by no means improbable, but which gives to India itself as many species of plants as we find described in botanical works.

No country in the world produces so large a num-

ber of forest trees as India; many of them of the highest value for timber, and, unlike our European trees, often distinguished for ample leaves and large and fragrant flowers. Nothing can be more glorious than the appearance of an Indian scene during the period, or soon after the rainy season, when the whole country is replete with fragrance and verdure; when many of the more delicate herbaceous plants, which had vanished, or languished under the intolerable heat, put forth their blossoms of every hue with astonishing rapidity, and seem by their wild luxuriance to express their joy and gratitude to the great Author of nature. An endless variety of shrubs adorn the hedges, which are often formed of some kind of *Euphorbia* or the odoriferous *Pandanus*, while cucurbitaceous plants, and a vast number of bindweeds and other climbers, interlace their flexible branches, overtop the hedges, and decorate even lofty trees with festoons of living drapery. A species of *Trichocaulis* ascends to the tops of the highest trees, and produces a beautiful white flower with a fringed border, but which, expanding only in the night, is rarely seen; while the abundant fruit, nearly as large as a small orange, and of a vivid scarlet color, is very ornamental. So numerous are climbers of this description, that trees and shrubs are lashed as it were together, and the Indian forests or jungles often rendered impenetrable except to birds and wild animals.—Where the silk cotton-tree (*Bombax ceiba*) and the Decansee-bean (*Butea superba*) abound, the effect which is produced by the crimson blossoms of the one and the scarlet blossoms of the other, has been described as inconceivably splendid.

Captain Raper, in his Survey of the Ganges, when speaking of the vegetation at a great elevation, mentions a species of oak, bearing acorns as large as pigeons' eggs, and of the same form—and abundance of hazel and walnut trees.

Rhododendrons, Andromedas, and Gualtherias have a range from the temperate to the frigid regions.—*Rhododendron arborescens*, the most beautiful species of a beautiful genus, rises along the mountains to the height of a tree, with a trunk of above twenty feet, bearing large clusters of vermillion colored flowers at the ends of the smaller branches. Rose-colored and white varieties were found by Dr. Wallich on the very summit of the mountain Sheopur, in Nepal, at an elevation of ten thousand feet. Even the strawberry flourishes, and the nearly allied genus *Potentilla* furnishes among others two most remarkable species, *P. formosa* and *atrosanguinea*, which, for the sake of their fine red flowers, have been transported from the lofty summits of Nepal to the flower gardens of Europe.

Even *Magnolia insignis* is a tree of vast size, the trunk being frequently four or five feet in diameter. When in full blossom, it is affirmed by its estimable discoverer to be one of the most magnificent objects ever beheld; the large, fragrant, and beautiful yellowish-white flowers are produced in vast numbers amid the dark green foliage, and are succeeded by oblong cones of purple capsules, from which the scarlet seeds are suspended by delicate white threads. This noble tree will bear, there is little doubt, the climate of Great Britain; and to try the experiment, at least, is one of the many laudable objects to which Dr. Wallich looks forward on his return to India.

The principal species made use of in the making of paper, is the *Daphne caroliniana*. It is a very branching shrub, six or eight feet high, with lanceolate shining leaves, and grows in the mountainous parts of Hindostan, from Nepal to the province of Kemaon. The flowers are exquisitely fragrant, resembling those of the *D. odora* of our hot-houses.—The paper manufactured from the bark is of various dimensions and texture. The finest kind measures ten feet in length by four feet in breadth, and is manufactured chiefly in Dotee, a province to the eastward of Kemaon. It approaches in softness and

size to that which is made in China, and Dr. Wallich thinks it is not improbable that some of the latter may be produced from the same material. The following particulars are extracted by Dr. Wallich from the MSS. of Lieutenant H. R. Murray, forming a part of that gentleman's official correspondence with the Military Board at Calcutta:—"The *Set-Burua*, or paper-shrub, is found on the most exposed parts of the mountains, and those the most elevated and covered with snow, throughout the province of Kemaon. In traversing the oak forests between Bheenmah and Ramghur, and again from Abnora to Chumpawat, and down towards the river, it has come under the immediate observation of the writer of these communications, that the *Set-Burua* or paper-plant, only thrives luxuriantly where the oak grows; so that it is not likely that it will succeed in the plains. It is hardy, and attains a height of five or six feet; blossoming in January and February, and opening its acid red fruit about the end of April.—The paper prepared from its bark is particularly calculated for cartridges, being strong, tough, not liable to crack or break, however much bent or folded, proof against being moth-eaten, and not in the least subject to dampness from any change in the weather; besides, if drenched or kept in water for any considerable time, it will not rot. It is invariably used all over Kemaon, and in great request in many parts of the plains, for the purpose of writing *nushbaums*, or genealogical records, deeds, &c. from its extraordinary durability. It is generally made about one yard square, and of three different qualities. The best sort is retailed at the rate of forty sheets for a current rupee, and wholesale at eighty sheets. The worst sort, however, is of a much smaller size, and retailed at a hundred and forty sheets, and wholesale at a hundred and sixty or seventy for the rupee. The following is the very simple process of manufacturing this paper: After scraping off the outer surface of the bark, what remains is boiled in fair water with a small quantity of the ashes of the oak,—a most necessary part of the ingredients,—which has the effect of cleaning and whitening the stuff. After the boiling, it is washed, and immediately beat to a pulp with small mallets on a stone; so that, when mixed up in a vat with the fairest water, it has the appearance of flour and water. It is then spread on molds or frames made of common bamboo mats."

Some of the finest leguminous timber-trees are perhaps to be found in the genus *Dalbergia*. Roxburgh describes *D. latifolia* as one of the largest mountain-trees of the peninsula. The wood is known by the name of *black wood*, and is of a greyish black, with light-colored veins, so heavy as to sink in water, close-grained, and admitting of the highest polish, which renders it highly esteemed for furniture. Dr. Roxburgh mentions having seen planks of it from the Malabar coast full three feet and a half broad; and allowing nine inches of white wood to have been on the outside, the circumference must have been fifteen feet, exclusive of the bark. Equally useful, and possessing the advantage of being one of the quickest growing timber trees in the world, is *Dalbergia cissu*. This wood, we are informed by Dr. Wallich, has no rival for purposes where toughness and elasticity are required to be combined. It does not splinter when penetrated or perforated by a cannon-ball. Throughout Hindostan the naves, felloes, and spokes of gun-carriage wheels are made of it in preference to any other. In the navy it is chiefly excellent for what are called crooked timbers. For all these purposes it attains a sufficient size in thirty-five or forty years: this is proved by several trees which were planted in the botanic garden at Calcutta in the year 1796, and which have now an elevation of eighty to a hundred feet, and a circumference of fourteen feet.

The next plant that we shall notice in our selection of leguminous species is perhaps one of the most interesting. This is the rice paper-plant, (*Eschymene paludosa*), the *Shola* of the Bengalese. Rice-

paper is prepared, or rather simply cut out of the stem of an herbaceous plant, to which Roxburgh gave the name above mentioned. The portions of the stem which we have seen are several inches in length, and from half an inch to above one inch in diameter, and entirely composed, to the very centre, of a fine white cellular tissue, marked in a transverse section with two or three delicate concentric circles, resembling those in the woody structure of dicotyledonous plants. The Chinese dye it of various colors, and employ it chiefly in the manufacture of their artificial flowers. The plant is perennial, of straggling low growth, and seldom exceeds a diameter of two inches and a half in the stem. It is brought to the Calcutta bazaars in great quantities in a green state; and the thickest stems are cut into laminae, from which the natives form artificial flowers and various fancy ornaments to decorate their shrines at Hindu festivals.—The Indians make hats of rice-paper, by cementing together as many leaves as will produce the requisite thickness; in this way any kind of shape may be formed; and when covered with silk or cloth, the hats are strong and inconceivably light. It is an article of great use to fishermen; it forms floats of the best description to their extensive nets. The slender stems of the plant are bundled into fascines about three feet long; and with one of these under his arm does every fisherman go out to his daily occupation.

The mahwah tree, or Indian butter-tree, (*Bassia butyraga*), the oil or illecepi tree, (*Bassia longifolia*), and the shea-tree, or butter-tree of Africa, probably also a species of *Bassia*, are among the number.—The mahwah tree is the most remarkable one in India; it is about the size of an English oak, according to Forbes, but with a beautiful large shining foliage.—The flowers are produced in full clusters at the ends of the smaller branches, and look exactly like berries, the true fruit, however, resembles a walnut, the olive-shaped seeds of which are replete with a thick oil, which is used as a substitute for ghee. The flowers are equally prized, for when dried in the sun they have been compared to Malaga raisins, both in flavor and appearance. They are eaten, in fact, in various ways—as a preserved fruit, as an ingredient in curries and other dishes, or even in their fresh state.—A good tree will produce in one season nearly three hundred weight of flowers. Their greatest consumption, however, is in the distillation of a kind of spirit, which goes by the name of mahwah-arack, and is so cheap that an English pint may be had for one pice, about the value of a halfpenny.

The oil expressed from the fruit of *Bassia longifolia* is constantly used by the common people instead of ghee and coconut oil. The flowers are also collected for food, as in the preceding species, and almost every part of the plant put to some use. It is said that owls, squirrels, lizards, dogs, and jackals eat the flowers, and that the latter sometimes become mad by partaking too freely of them.

Urceola elastica, or the elastic gum-vine, is a plant of this order, which yields a viscid milky juice, possessing the properties of caoutchouc. It is an extensive climber, two hundred yards or more in length, winding among the branches of the loftiest trees, and rising above them into the open air. The milk, when exposed to the atmosphere, becomes solid; and by means of it Mr. Howison succeeded in rendering cloth water-proof, and suggested that it might be applied to the making of hats, great coats, tents, coverings for carriages, &c. The plant grows in Sumatra also, and Dr. Roxburgh believes that the Chinese make their elastic rings from its juice.

GRASS LANDS.—If a supply of fine manure is on hand, scarcely your grass lands, and then give them a topdressing with manure. This will greatly increase the quantity of hay. If you have reason to think moles, ants, and the frost have rendered ground uneven, the grass will be benefited by rolling.

[New York Farmer.]

(From the New York Mirror.)

ARBORICULTURE.

Those of our readers who feel interested in arboriculture, may remember the republication by Messrs. Thorburn & Sons, last year, in this city, from the English edition, of a work entitled the "Planter's Guide."—This was a treatise by Sir Henry Stuart, embracing various information on the subject of removing large trees. However much our countrymen boast of the American forests, the knowledge how to transplant the giant ornaments of the wood, for the embellishment of their dwellings, is by no means uninteresting; on the contrary, all gentlemen owning seats, and not acquainted with the successful experiments accomplished by Sir Henry Stuart, and stated in his book, must be gratified to know that they could overshadow their mansions with large and umbrageous trees, of any size or age, at an expense not exceeding 2 or 3 dollars each.

We have been favored with a letter from a gentleman who called on Sir Henry Stuart, at his residence, Allanton house; a lovely abode, beautified with many practical illustrations of his theory, and who presented him with a copy of the New York edition of his book. We extract a few paragraphs from his communication:

"I rode from Edinburgh, twenty-eight miles on purpose to see Sir Henry, and with book in hand introduced myself into the fine hall of Allanton house. He received my message rather coldly. 'A gentleman from America.' Word came out by the servant that Sir Henry was just going to set out on a journey, but if I wished to see the trees, he would order a person to shew me his grounds. I replied that I wished particularly see himself, and would detain him but a few minutes. Thus summoned he appeared—a neat looking old gentleman, about sixty-five, of rather a spare habit, and both active and intelligent.—On making known the object of my coming, he took me into the drawing room. I told him how happy I felt on being enabled to pay my respects to him, and particularly on a day (it was Washington's birth day) dear to every American. He almost embraced me, declaring that he thought Washington one of the most illustrious of men, and that he was glad that the animosities between the two countries were fast giving place to friendly feeling. He expressed himself proud and surprised that his book should be published in America, the last people, he thought, who would feel any interest in his theory. He observed it had been translated into German and French, but he never dreamed of America—that land of tree extermination without mercy. He examined and re-examined the book, until he grew ecstatic, uttered his astonishment that in America we could get up so beautiful a piece of workmanship; admired the plate, the wood cuts, the paper, &c. produced the Edinburgh copy, declaring the N. York the handsomest in every respect. He then introduced me to his family, showing them the book, and expressing his surprise at its beauty and low price. He immediately deferred his journey, and insisted on showing me over the grounds in *propria persona*. It was a charming sunny day. You would have been delighted to hear his interesting observations on the trees he had removed. They really looked fine, and very vigorous, even to the extreme ends. All those in the park, and many in other parts of the place, with the exception of three or four standard old fellows, were transplanted by the machine. The lake is altogether a work of his own; it is upwards of a mile in circuit, and twenty feet deep, and so planned, that from no point can you see its termination. There is a pretty little island of an acre, which he filled with trees in a week. Does it not seem like fairies' work? The lake abounds with fish; and has an ingenious contrivance under the arches of the bridge to prevent the pike from destroying their less pugnacious neighbors. Noble swans were sailing on the lake, and on desiring Sir H. they fol-

lowed us until he had to stop and feed them with some biscuit, which he carries in his pocket for that purpose. They came up to his hand, and after receiving the expected favor floated away.

"The family would hardly allow me to depart, and wished me to spend a day with them. On my taking leave, Mrs. MacDonald, a daughter of Sir Henry, and her son accompanied me a mile on the road; after which the latter proceeded on with me for fear I should lose my way, as we had a mile or two to walk across the fields and roads to meet the Glasgow mail. Sir Henry is going to write me an account of some improvements in his theory, to be published, or added to the next edition. He informed me that it is now out of print, but a third edition will be shortly published. He recommends a tree of twenty-five feet as the best for the machine; although he asserts that if the machine was large enough, any tree could be removed. Thirteen or fourteen shillings he remarked was the whole expense, and often less."

VEGETABLE NATURE.

Smellie, in his Philosophy of Natural History, has the following remarks on what is called the "sleep of leaves."

The leaves of many plants fold up during the night but, at the approach of the sun they expand with renewed vigor. The common appearances of most vegetables are so changed in the night, that it is difficult to recognize the different kinds, even by the assistance of light.

The modes of folding in of the leaves, or of sleeping are extremely various; but it is worthy of remark, that they all dispose themselves so as to give the best protection to the young stems, flowers, buds or fruit. The leaves of the Tamarind tree contract round the tender fruit, and protect it from nocturnal cold. The Cassia, the Senna and many others, contract their leaves in a similar manner. The leaves of the Chickweed, the Asclepias, the Atriplex, &c. are disposed in opposite pairs. During the night they rise perpendicularly, and join so close at the top that they conceal the flowers. The leaves of other plants are placed alternately. Though horizontal and even depending during the day, at the approach of night they rise, embrace each other, and protect the tender flowers. The leaves of the night shade, are horizontal during the day, but in the night they rise and cover the flowers. The Egyptian Vetch erects its leaves during the night in such a manner that four seem to be one leaf only. The leaves of the White Lupine in the state of sleep hang down, and protect the young buds from being injured by the nocturnal air.

These and similar motions are not peculiar to the leaves of plants. The flowers have also the power of moving. During the night, many of them are enclosed in their calyxes. Some flowers, as those of the German Spurge, Geranium Strictum, and common Whitlow Grass, when asleep hang their mouths towards the earth, to prevent the noxious effects of rain or dew.

The cause of these movements which constitute the sleep of plants, has been ascribed to the presence of the sun's rays. In some of the above mentioned examples the motions produced are evidently excited by heat. But plants kept in a hot house, where an equal degree of heat is preserved both day and night fail not to contract their leaves, or to sleep, in the same manner as when they are exposed to the open air. This fact evinces, that the sleep of plants is rather owing to a peculiar law, than to a quicker or slower motion of the juices.

MANUFACTURAL PLANTS.—Farmers should endeavor to become acquainted with the plants that are used in manufactories, with a view of introducing more or less of them in their routine of culture.—Woad, madder, flax, hemp, mustard, oil plants, rape, poppy, rhubarb, and numerous others, are used in the arts, domestic economy, and medicine.—N. F. Far.

A GUIDE TO ORCHARDISTS.—Mr. Michael Floy, well known as a florist and nurseryman of this city, has just published Mr. Lindley's celebrated work with the above title, with additions, notes, and corrections. We have not had time to read the work, but have no reluctance, from Mr. Floy's experience, and accurate knowledge, to recommend the work as one, the merits of which will render it a standard.—The work is closely printed, and contains more matter than the English edition, with half the price.

[New York Farmer.]

RURAL ECONOMY.

CULTURE OF BEES.

MR. SMITH: *Henrico, Va. May 3, 1833.*

For many years I have paid much attention to the raising and management of bees; and before the miller or moth worm made its appearance, about eighteen years since, I had been very successful. The quantity of honey produced was much greater when I used the double hives, and after I had declined driving and robbing them, which I seldom did with success. But since the appearance of that destructive fly or worm called, by some, the miller, I have scarcely made honey sufficient for family purposes. I was much pleased to see in your paper, of March 29th, an extract from the Genesee Farmer, of the experiments made by W. W. B., who appears to have thought much upon the subject, and to be anxious to discover some method of stopping the ravages of the worm. I have tried many ways, and have not yet succeeded. First, I made a good shelter, of sufficient size to cover eighteen or twenty, with a large thick bench to set them on. Both ends of the hive were made perfectly tight, and holes made about an inch from the bottom, for ingress and egress. This not effecting the desired object, I had spouts inserted into the side of a hive, for them to pass in and out. Others I have placed upon pivots or little pebbles, and sometimes have placed one or two on the ground. Some few years since, having a cavity in the side of my house, about eight feet high and twelve inches square, I concluded to use it as a beehive; and accordingly made a hive with two apartments. (two doors to each apartment;) one of glass, the other of wood, to darken the hive. Into the lower apartment I put a swarm of bees, through the lower sash of the inward door, and inserted a tube, of one inch diameter and six in length, through the wall of the house as a place of ingress and egress. They appeared to do very well for a while, when I discovered the fly had got in and observed a little of the web on the exterior of the comb. Some time after this, I killed them, and took about five gallons of honey. I have since put in a new hive, made very tight; and about this time two years since, I ushered in a new swarm as before—hoping, from the size of the lower and upper cavity, they would remain there until they had filled both, without swarming. But to my astonishment, believing they would never swarm so long as they had room sufficient, about June last there came out a very large swarm. I have seen through the glass one of those flies that deposite the egg, from which the worm comes, running about inside of the hive, as if looking for some way of retreat. I have not discovered, however, any injury as yet from them in this hive. But if it be true, as an old bee hunter of veracity has told me, that bees found in trees twenty-five feet from the ground were injured, I fear neither the plan of W. W. B. nor mine will avail. I am now trying the following plans to keep out the worm. 1. I have fixed my bee house in such a manner as to enable me to suspend all my hives about six inches above the bench, by hanging them upon a hook, or fixing them on two pieces extending from one end of the house to the other. 2. I have had a hive made twelve inches square and fourteen inches from the top to the shoulder; the sides sawed in, and with the use

of hot water, bent and brought to a point, just so close as to be sufficient to admit the passage of the bees. This I have suspended about a half an inch from the bench, leaving no place for a deposit. I have not had a trial sufficient to ascertain the utility of this method; but if suspending is best to keep out the worm, I am satisfied it is best to have them made in this way for the following reasons:—1. The hive swings better upon the rack spoken of above. 2. The jaws of the hive being brought to a point, leave no place for a deposit of that farinaceous substance which is so often found at the bottom of bee hives, and which is so congenial to the hatching of the worm. Besides, the bees find much less difficulty in entering a suspended hive made in this way, than in the hive which is open at the bottom the full size.

R. H. S.

(From the Western Pioneer.)

RECEIPT TO CURE HAMS.

The following receipt has been communicated to us for publication. We are assured that the result of the process recommended will render the pork of a delicious flavor; so much so as to cause the most stubborn Jew in Christendom to forswear the religion of his fathers:—aye, even choice enough to lure the shade of departed Epicurus for the richest banquet of an Elysian paradise.

To cure a dozen hams of ordinary size and weight, take twelve pounds of common packing salt, one pound of saltpetre and one gallon of molasses: rub the hams thoroughly with this composition, and pack them down as closely as possible in a cask. Let them remain one week; then take one-half a bushel of hickory ashes, make of it a strong ley, add to it a pickle which will bear an egg, pour the pickle so as fully to cover them, and let them remain in it three weeks.

In the summer season, after the hams are smoked, put them in a cask in layers, with layers of perfectly dried tan bark between them.

RECEIPT FOR MAKING TOMATO SAUCE.

Take tomatoes when ripe, and bake them till they become quite soft; then scoop them out with a teaspoon and rub the pulp through a sieve. To the pulp put as much Chili vinegar as will bring it to a proper thickness, with salt to your taste. Add to every quart half an ounce of garlic and one ounce of shallots, both sliced very thin. Boil it one quarter of an hour; then strain and take out the garlic and shallots. After standing till quite cold, put the sauce into stone bottles, and let it stand a few days before it is corked up. If, when the bottles are open, the sauce should appear to be in a fermenting state, put some more salt, and boil it over again. The sauce should be the thickness of rich cream when poured out, and is, in my opinion, far superior to the famed Bengal chutney, to which it bears considerable resemblance.—*B. B. Sept. 6, 1831.*

(From the Saturday Evening Post.)

FEEDING SWINE.

Sir,—You will oblige an old subscriber, and perhaps benefit the public, by inserting the following:

I observed in your paper, of the 19th of the last month, an article on the feeding of swine, in which was recommended the practice of keeping them constantly penned up. Now, I consider this the very reverse of what ought to be done, for the following obvious reasons: viz.—It deprives the animal from enjoying that perfect state of health, which he otherwise would enjoy, if allowed to range at large; and being constantly fed on greasy dish water, and other impure substances, the meat of course have a strong taste, and lose much of its flavor—and hence we see the reason why the citizens always prefer the country pork to

that of the butchers, who keep their swine constantly in pens, and feed them on filthy animal substances.

The food of swine should be entirely vegetable, and when allowed his liberty will feed considerably on grass, acorns, chestnuts, apples, cherries, &c., which he is entirely deprived of in a state of confinement. It is true he will fatten much faster, when confined, than when running at large. Just so it is with a human being when confined to his chamber—if not absolutely sick, he will grow fat and fleshy; but it will not be solid, nor will he enjoy as much health and spirit as when he takes daily exercise in the open air. And this is the case, without exception, with all the animal creation; and even the vegetables require the force of the sunshine, wind, and rain, to make them thrive.

The milk of the cow, in a state of confinement, is not fit for use. This I know by experience—for being accustomed to use milk, instead of tea and coffee, and boarding at a tavern in this city, where the cow was kept constantly in the stable all the year, the milk, particularly in the summer, had such a disagreeable sickening taste that I could not possibly relish it. For the same reason also, the flesh of wild fowls and animals is much sweeter, and has a finer flavor, than those kept in confinement, because they have free exercise in the open air, drink the pure crystal stream, and live on that kind of food, which nature intended.

But, to conclude, I would observe, that all those who live on small lots, and have no range for swine, are generally obliged to keep them in pens, if they keep them at all; but all farmers, who have a convenience to let them run at large, should embrace the privilege, if they wish their pork sweet and good.

But in the autumn previous to their being killed, it is customary, and no doubt very proper, to pen them up a short time, in order that they may fatten the sooner; but during which period, corn should form the principal article of food. Yours, &c.

A FRIEND TO DOMESTIC ECONOMY.

MISCELLANEOUS.

BRAN OR HULL OF WHEAT, &c.

In a French paper, we find the following extract from the proceedings of the Academy of Sciences, which we translate for the benefit of our readers:

Economical researches relative to the bran or hull of wheat and other bread stuffs, by Dr. Herpin. The author gives the results of his researches in the following propositions:

1st.—That the envelope or cortical part of the wheat forms at least one-twentieth of the weight of the grain.

2dly.—That nevertheless by the customary mode of grinding, wheat produces one-fourth of its weight in bran.

3dly.—That about seventy-five per centum of the nutritive substance of the grain is left in the bran.

4thly.—That by simple washing, there may be drawn from the bran one half its weight of the first quality of flour or oatmeal, according to the nature of the grain.

5thly.—That there may, by this mode of proceeding, be made from grain at least fifteen per centum, more bread than is at present obtained; that is, from the same quantity of grain now used in France, there might be had three millions of kilograms of bread per day, more than is now obtained.

(From the New Hampshire Sentinel.)

EXTRAORDINARY BULL.

The man who raised the best stock of cattle, heretofore, or any extraordinary animal, has received not only honor but a premium. Mr. Henry Wheeler, of Nelson, has beat them all. He killed a bull only fourteen months old on the 5th

March, which, on being dressed, was found, to the surprise of the beholders, to have hoarded up the substantial which made him the most valuable animal of his size ever raised in America! Bank bills in good order and well conditioned,—not a counterfeit among them,—were taken from the animal, to the amount of sixty-one dollars. The owner challenges competition.

A solution of the above—One day last week, Mr. Sam'l Derby of Nelson, in the act of taking out a string from his pocket to measure a pair of cattle he was about to purchase, pulled out his pocket book unconsciously, containing sixty one dollars in bank bills. The pocket book was soon after seized by a yearling bull, and before it could be extricated was pretty well masticated and swallowed. The bull was immediately killed and all the money taken from the stomach of the animal uninjured.

(From the Medical Journal.)

A CHEAP AND CONVENIENT BATH.

There is one mode of refreshing and hardening the body that is extremely cheap, extremely convenient, and yet seldom adopted. The warm and cold water bath is indispensable to health. No system can go on with its full natural vigor so long as the pores of the skin are encumbered and obstructed by the particles of perspirable matter, that, not being carried off by evaporations, accumulate on the surface. In some form or other, general ablution is required, and that often, by all animals, and by none more than by man. Independently of the benefits of cleanliness derived from such baths, there are other advantages resulting from them, which it is not our purpose here to discuss; and which, to medical men certainly, are already sufficiently familiar. But the cold and the warm bath are attended with some inconvenience, and with some expenditure of time, and, in this city, of money also. It is not an indifferent matter, therefore, that all should be reminded of the power of the air bath, in promoting both health and comfort, and rendering the water bath less frequently necessary. It costs nothing to expose one's self a few minutes, on rising in the morning, to the air of a dressing room; and, after a short time, it will always be regarded as luxury. In summer, the windows of the apartment may be open, and the external air admitted freely around the person. If to this delicious and invigorating bath, friction be added, we can scarcely name a more sure method of preventing disease and imparting tone and vigor to the whole system.

Time even need not be given to this bath. The windows being thrown open, and the door of the dressing room shut, the operation of shaving (which, by the way, is performed at this time with more ease, and less danger of drawing blood, than at any other part of the day) and the ceremonies of ablution may all be performed in a state of nudity; so that the most thorough air bath may be taken every day, without the least possible expense, even of a moment's time, without inconvenience, and with great advantage to the body and the mind.

We forbear to dilate on this subject. To the wise, the words already written will be sufficient. The foolish, pages of argument and explanation would but confirm in their folly.

ENGLISH PARTIALITY FOR FLOWERS.—The nation altogether has a particular love for trees and flowers. The lord has in his parks, oaks of a thousand years' growth, untouched by the axe, hot-houses full of exotic plants, exquisite fruits and the rarest flowers; there is not a cottage in England which has not before it a little piece of ground for the cultivation of flowers, and even the poor town imprisoned artisan works at his loom in sight of a pot of flowers, placed on the window sill, (with a mind no less generous than my lord's,) in order that the passengers also may enjoy the sight of them.—*Italian Exile in England.*

Prices Current in New York, May 4.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 11½ a 11¼; Upland, 10½ a 12½; Alabama, 11 a 14. Cotton Baggins, Hemp, yd. 13 a 21½; Flax, 13 a 14½. Flax, American, 7 a 8. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.50 a 5.75; Balt. How'd st. 5.50 a 5.74; Rhd city mills, — a —; country, 5.50 a 5.62; Alexandria, 5.50 a 5.62; Fredericksburg, 5.50 a —; Petersburg, 5.50 a —; Rye flour, 3.75 a 4.00; Indian meal, per bbl. 3.75 a —, per hhd. 16.00 a —. Grain, Wheat, North, — a —; Vir. — a —; Rye, North, 76 a 78; Corn, Yel. North, 73 a 75; Barley, 68 a 70; Oats, South and North, 45 a 46; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Pork, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, 7½ a 9.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1½ " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenths Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.
Amer. Far. Office.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED. Also

MAMMOTH PUMPKIN SEED.

EARLIEST FRENCH CABBAGE do.

EARLY FRENCH, or PARIS WHITE ONION do.

ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

I. I. HITCHCOCK.

PUBLIC SALE OF DURHAM SHORTHORNED CATTLE AND HIGHLY IMPROVED SHEEP.

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEIFERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5,—81

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life,) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 13 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,

Ap. 26—16. Amer. Farmer Establish. ment.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at 75 cents per bushel.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

200,000 WHITE MULBERRY TREES.

The Subscriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the *Morus Multicaulis*, or Chinese White Mulberry.

ASA BUTLER,
Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12,—61.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville,) double Altheas, Honeysuckles, Cornus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees, Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Scythes, the Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Coneave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—Some alterations will be noticed in the prices of produce. Flour has advanced, and a tolerably fair business is doing; the same remarks apply to all kinds of grain. City mills flour has advanced above Howard street, in consequence of there being greater certainty of freshness, which is all important at this season, particularly when the flour is for exportation.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 769 lbs. Md.; 106 lbs. Ohio; and 1 hhd. Vir.—total 576 lbs.

Flour—best white wheat family \$6.75 a 7.25; super Howard-street, 5.37½ a 5.50; city mills, 5.50 a 5.75; city mills extra 5.50 a 5.75.—Corn Meal bbl 3 62½.—Grain, best red wheat, 1.20 a 1.25; white do. 1.30 a 1.35; —Corn, white 65 a 66, yellow, 66 a 67;—Rye, 75 a 77 —Oats, 37½ a 41.—Beans, 75 a 80.—Peas, 65 a 70.—CLOVER-SEED, 8.00 a —.—TIMOTHY, — a —.—ORANGE GRASS, 3.00 a —.—Tall Meadow Oat Grass 2.00 a 2.50.—Herd's, — a —.—Lucerne — a 37½ lb.—BARLEY.—Flanders 1.50 a 1.62.—Cotton, Va. 10 a 12.—Lou. 12 a 13.—Mah. 12 a 13.—Tenn. 10 a 12; N. Car. 10 a 12; Upland 10 a 12½.—WHEAT, 9 bbls. 1st q. 29½ a —; in bbls. 31 a 32.—Wool, Flashed, Prime or Saxony Fleeces 45 a 50; American Full Blood, 38 a 42; three quarters do. 35 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleeces, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18. HEMP, Russia, ton, \$195 a 205; Country, dew-rotted, 6 a 7e 1b. water-rotted, 7 a 8e.—Feathers, 36½ a 37½.—Plaster Paris, per ton, 5 25 a 5 50. Ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.50 a 6 25.—Oak wood, 3 00 a 3 25; Hickory, 4 50 a 5.00; Pine, 2, 25.

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GENERAL

Agricultural and Horticultural Establishment: COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore; in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

§ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, MAY 17, 1833.

THE SEASON—DALILIAS.—The drought mentioned in our last as being very severe, was happily quenched on the very day our notice of it was published.—On Friday, a change took place in the weather: we had a steady light rain till Sunday morning, and “spring showers” occasionally, to the present time. This change afforded a good “season” for transplanting, and we doubt not, it was generally availed of by gardeners and planters. The editor of the Farmer, at least, took advantage of it, for transferring to the open ground, one of the largest collections of dalilias ever seen in America, consisting of about two thousand plants, fifteen hundred of which are *new*, and the others the most celebrated kinds. The lovers of flowers will hear more of this collection in the fall.

The following paragraphs will give an idea of the season, in the various sections of the country whence they emanate:

Extract of a letter from a subscriber, dated

“McDonnough, Henry Co. Geo. April 28, 1833.

“Our spring is very late, attended with cold, and generally very wet weather. Our grapevines have been retarded in their vegetation so long, by the coldness of the season, that the frosts have had no effect upon them thus far—and now we apprehend no danger from that source. The prospects, at present, are favorable for an abundant crop of grapes.”

Extract of a letter, dated,

“Cleveland, Ohio, May 4, 1833.

“Such a drought, I never before experienced in this country, at this season of the year. Our small grain is turning yellow, and must soon perish for want of rain, and it is useless to plant Indian corn, unless you want to kiln-dry it. Give me a brush of a hurricane now and then, rather than a spring drought.

Yours, respectfully, J. C. S.”

THE COMPASS PLANT.

MR. SMITH:

Cleveland, Ohio, May 4th, 1833.

In the first number of your current volume, is an account of the *compass plant*. Upon reading the article, I thought it probably might be a *Silphium*—perhaps, the *S. gummiiferum*, “almost exclusively a prairie plant,” or the *S. terebinthinaceum*. (See Elliott’s Botany, vol. ii. pp. 460 and 463.) The other name of the plant your correspondent speaks of, (*rosin weed*.) appears to agree with both the specific names of Elliott, though I can find nothing said with regard to the polarity of its leaves, which certainly is a very remarkable and striking feature. I think I have heard some such quality attributed to the leaves of Indian corn, and if I do not mistake, mention is made of the same in some of the volumes of the American Farmer. I have not time, at present, to hunt up the article.

Some time last fall, I received from a friend, who got them from Arkansas, a few seeds, which were given to him as those of the *torpentine plant*. The following memorandum accompanied the package, made by the gentleman who gathered the seed in Arkansas:—“This is the seed of a plant unknown to me—it grows six feet high, and looks very majestic—yields a *pitch* or *rosin*, somewhat like *torpentine*, about the stock. It has a pretty large root: the size of a parsnip or the Columbo-root, and tastes like some medicine I have taken. It is undoubtedly some valuable medical plant.” I think upon comparison you will say this Arkansas vegetable, and the one described by Mr. Speed, as coming from Missouri, are one and the same—and very probably one of the *Silphiums* above mentioned. This we cannot tell, however, until we get the flower. Not having any mode of

forwarding to you a larger quantity, I herewith send you two seeds of the *torpentine plant* I got from Arkansas—I think you will find, if they vegetate, that they are identical with those you received from Missouri. I also send you a couple of seeds, gathered by myself, on the banks of the Ohio, from the *Silphium perfoliatum*. You see how similar they are to the Arkansas seeds. The *S. perfoliatum*, is well worth a place in a botanical garden. It grows nearly ten feet high in our luxuriant bottom land, and has a majestic and civilized appearance, as it were, demanding homage from the rough weeds that surround it.—Should you plant these seeds, place them in the richest and moistest ground you have.

I obtained at the same time, and by the same hand, some seed of the “Arkansas wild cabbage,” which may afford, at some future day, a subject for another communication.

Can you not raise a subscription in Baltimore, to collect the necessary funds, to forward to Commodore Porter, for the purpose of obtaining the Angora goats? Yours, very respectfully, J. C. S.

[We agree with J. C. S. that the “Compass plant” is most probably a *Silphium*. The seed sent us by Mr. Speed, did not vegetate.—Ed. Am. Far.]

(From the New England Farmer.)

WASH FOR FRUIT TREES.

Although we have heretofore published the following, we again insert it for the benefit of young farmers and recent subscribers. It was recommended by Mr. Benjamin Wheeler, of Framingham, Mass., and first published, we believe, in the New England Farmer, vol. iv. p. 213.

“Dissolve two pounds of potash, of the first quality, in seven quarts of water, for the bodies of the trees. If the limbs are covered with moss or lice, I take a painter’s brush, and apply the solution to the moss, &c. with care not to touch the leaves or buds. It may be done at any time of the year when we are most at leisure. Once in two to four years is generally sufficient. I have no general rule, however, but wash them as often as they appear to need it, which is always when the bark is not smooth.”

Mr. Wheeler observes, that “No person need be afraid of this application injuring fruit trees; but it may be applied with the utmost confidence. I have used it for nearly twenty years with great effect. I have recommended it to a great many gentlemen, but only a few have used it. Those who have tried it are much pleased with its operation. The reason that it has not been more generally used is, that it has been fashionable to daub the trees with lime, clay, manure, and other compositions, which take two or three years to wash off before the tree will look natural. When this solution of potash is applied, it has the desired effect immediately. It kills the moss and lice at once; and the first rain that comes washes the bark perfectly smooth, and gives it a fair, natural, healthy color.”

It is said that this application was introduced by the late Governor Brooks, in Medford, Mass., the summer before his decease, who believed that it not only accelerated the growth of the trees, but was an *effectual preservative against the borer*. It was applied by that gentleman once every year, either the latter part of May, or the beginning of June. The opinion that the above described wash is a remedy against the borer, is corroborated by Messrs. Winships, proprietors of an extensive nursery, &c. at Brighton. In a letter to the editor of N. E. F. they observe: “Five years ago (preceding 1830) we were exceedingly troubled, having, at the same time, several thousand trees infested with borers. We applied the wash, as recommended by B. Wheeler, Esq. of Framingham, and have continued it ever since, (the first week in June in pleasant weather,) on from five to ten thousand trees, annually. The ad-

mirable effect has been astonishing; not only effectually preventing the destructive effects of the borer, but killing immediately the moss, and destroying those other insects usually found impeding the good health of the tree; also resuscitating and invigorating every kind of tree we have applied it to. We would recommend, as a general wash, one pound of potash to six pints of water. And for promptness of execution the mariner’s long handled tar brush, or the common paint brush will answer. Every other year will answer as a remedy against the borer, although the horticulturist will find himself richly rewarded by a more frequent application.”

LOCUST.—We took the liberty some time since, of inviting the attention of our patrons to the necessity and advantages of growing timber trees; and particularly the locust, because it is easily propagated, the wood is of exceeding durability, and its growth is astonishingly rapid. Cobbett, in his “Woodlands,” furnishes a number of cases showing the rapid growth of the locust, some of which are so remarkable as almost to create doubts of their correctness, in the minds of those who have not attended to this matter.

His first class of cases embrace trees of seventeen years’ growth, the largest of which was *five feet eight inches* in circumference at the ground; the second, trees of 14 years’ growth, the largest of which was *two feet four inches* at the ground; the third, trees of 11 years’ growth, the largest of which, as above, was *three feet two inches*.

After making these statements, Mr. Cobbett adds, did any one of my readers ever know or hear of a growth of timber tree equal to this? Yea, verily, Mr. Cobbett! Ohio has beaten you. To show this we give the size of two locust trees grown in the vicinity of this place, and which may be seen and measured by any person having the curiosity to do so, on the farm of Mr. Aldridge.

The first is of *thirteen years’* growth, and a few days since, measured one foot from the ground, *five feet seven and a half inches* around, and is about the same size, or very nearly so, to where it branches off from the main trunk.

The second was planted in 1828, and has been growing of course five years; it measures *two feet four and a fourth inches*, as above, and is tall, and well formed. He that shall beat this need not despair of growing *Jonah’s gourds*.—Farmer’s Chronicle.

USEFUL IMPROVEMENT.

A patent has been procured at Paris, a gold medal granted, and other honorary distinctions conferred, for the discovery and practice, on a large scale, of preparing from potatoes a fine flour or sago, equal to ground rice, and a *semolina* or paste, of which one pound is equal to one and a half pound of rice, one pound and three quarters of vermicelli, or as it is asserted, to eight pounds raw potatoes. Large engagements have been made for the French marine, and for the military and general hospitals, where it is found serviceable as a nutritious aid with wheaten flour, for biscuits, pastry, soups, gruel and pava.—Count de Chabrol states that 40,000 tons of potatoes are annually manufactured into flour, in a circle of eight leagues round Paris. The manner of preparation is not known. But Mr. M’Innes states, in the Quarterly Journal of Agriculture, his method of preparing tapioca, which is presumed to be somewhat similar to the French mode. The potatoes are grated into water, and the mass is passed through different strainers and waters, until it is perfectly purified from the fibrous matter, and the starch becomes pure and clean. It is then exposed to dry, after which it is dried over a heat of the temperature of one hundred and fifty degrees, and made into cakes till needed for use. It is used in bread, puddings, &c. generally with a portion of wheaten flour. See *Qr. Jour. Ag.* vol. 11, p. 68.

AGRICULTURE.

(From the Southern Agriculturist.)

ACCOUNT OF AN AGRICULTURAL EXCURSION,
Made into the South of Georgia, in the winter of 1832.

BY THE EDITOR.

(Continued from page 19.)

The island of "St. Simons," is remarkable for its healthiness, and the planters enjoy the great advantage of living constantly on their plantations, and superintending in person all of the operations. The character of the soil we have already stated to be, a light sand, and there is a greater uniformity on this island than we have noticed on any other. It is throughout extremely level, neither broken into hills and dales nor intersected by swamps—in fact, there is, we believe, but one on the whole island, and that being at the head of a large creek, can easily be drained. The plantations, with one or two exceptions, are situated on the outer edges of the island, leaving the interior unoccupied, except by a growth of shrubs and scattering wood. This part which, no doubt, at one time was thickly wooded, has been so cleared, that there remains on a large portion but little else than shrubs and trees of a second growth, and unless care be taken in time to guard against the evil, the day cannot be far distant when the want of firewood will be sensibly felt.

We have already noticed the culture of cotton on two plantations; the general mode does not differ materially. Beds are made at the distance of five feet apart, large and flat, occupying nearly the whole of that space. The seeds are scattered over the tops of the beds, and the plants when thinned out are left at irregular distances; varying from eight to twelve inches, not in a line as is common with us, but occupying a width of from twelve to fourteen inches. The plough is in general use, the fields are hoed over from six to eight times in the season; care being taken in the two last hoeings to confine the operations to weeding, rather than to stirring or drawing up the soil, both of which are believed to occasion a dropping of the pods and forns. In one of Mr. Couper's fields, we saw some very luxuriant plants; but the height of what we saw in most of the fields, would not, we think, average more than four feet. We saw much which was below this. Except on a few plantations, very little labor has been expended in the manuring of cotton, and we saw several fields which were evidently exhausted by the system pursued. The product per acre, varies from one hundred to two hundred pounds, but even this quantity is exceeded on some plantations in favorable years, and the average product of the whole island for 1832, was estimated at two hundred pounds.

The cotton on most of the plantations, if not all, is got out by Eave's gins, propelled by animal power. The quantity ginned per diem, is certainly considerable, and our planters would do well to ascertain whether they might not be advantageously introduced into this State. We are aware that they have been tried and abandoned, owing, in all of the instances which we have heard of, to a difficulty in managing them. We are somewhat at a loss to conjecture in what this consisted, we saw several at work both on St. Simon's and on the Main, and there appeared nothing likely to occur, but what might soon be remedied by a common carpenter. It is, however, a fact, that they have been several times tried and abandoned on our sea-islands; and yet, in the lower part of Georgia, they are in common use and do gin a large quantity per day, as the statements furnished us, and which we give below, fully prove. We could give but an imperfect idea of the machine by a drawing, certainly not such an one as would enable a planter to have one constructed. We, therefore, content ourselves with merely stating that, according to Eave's original arrangement, the gin consists of two pair of rollers, about thirty inches in length, (we state this from me-

mory, not having measured them,) placed obliquely one above the other. Each roller is confined to its place by several iron boxes placed at regular distances on wooden pieces corresponding in length to the rollers. Below each set are a number of curved wire teeth, five or six inches long, which serve to hold the cotton when thrown in, whilst at the same time the seeds are permitted to escape between them. Another piece of wood having also a number of wire teeth, nearly of the same length is fixed immediately in front of the rollers, and this piece is made so to move by means of a crank, that its teeth pass between those below, and within a half inch of the rollers, taking the cotton at the same time and presenting it to them, and as there is a constant motion upwards and downwards, the cotton is generally in such a state as not to choke the rollers.

These double gins have been found to be somewhat complicated, and recently gins with single sets of rollers have been made, which are found to be much more simple, and to gin more in proportion than the double ones. All are propelled by animal power, and the cog-wheel and pinion driving a band-wheel, are used on all the places we visited. In the arrangement we saw nothing different from that in common use in this state, where animal power is used. The following notes, furnished us by J. H. Couper, Esq. will, however, convey much useful information, both as to the mode of applying the power, and the proportions necessary for each part.

"The simplest and most common plan is to erect a gallows frame of three or four strong posts, connected at top by two large cross beams, that receive at their intersection the upper gudgeon of the king-post. Arms, as usual, are attached to the king-post, and four or five feet above them, in the place of the wheel, twelve or sixteen light arms are substituted, the ends of which are notched to receive a rope or a band of twisted cow-hide.

"The rope or band drives a drum-wheel on the same shaft with the band-wheels that drive the roller pulleys. The drum, band wheels and gin, are contained in a small building adjoining the horse-walk. This arrangement has nothing to recommend it, except its original cheapness and its simplicity. The exposure to the weather occasions a rapid decay in the king-post and frame, and the rope or band requires frequent renewal.

"When the plantation is extensive and two gins are required, it has been deemed advantageous to erect a building thirty-four to thirty-six feet square, two stories high. The first story is occupied by the horse-walk; in the second are the gins and moting tables, and in the third or garret the fan or whipper, with a shop for turning rollers, &c. This arrangement is undoubtedly the most complete and durable; but the expense, forms an objection to its adoption except on extensive plantations. On this plan are the gin houses at Carmen's point, Hamilton, estate of Butler, Dr. Tunno's, and at this place.

"A medium system is that, when the horse-walk is contained in a cheap building, and the gins and other machinery in a small one adjoining. The building to contain the horse walk is made by placing lightwood or oak posts in the ground, with an inclination inwards, to counteract the outward pressure of the rafters. The rafters are secured to the tops of the posts by mortices and tenons, and are suited in the same way to a centre-post. Two strong beams, at right angles to each other, are let down on the heads of two of the posts; they serve to brace the shed and receive the gudgeon of the king-post. The double roller gin has two pair of rollers, and is Eave's original arrangement. Within a few years, Mr. Pottle, of St. Mary's, in this state, has substituted two single roller gins for the double one. He places them back to back, forming an angle with each other, and both are driven by the same band wheels, which are placed above and between them.

"The arrangement is simple and cheap; and four

rollers or two pair on this plan, gin out more cotton than the same number in the double gin, when they are placed over each other, in consequence of the seed from the upper pair falling between the cotton and rollers of the lower, and preventing the cotton being seized by the rollers. Mr. Pottle's gins are very highly esteemed and are much used. He has great practical skill; and is very moderate in his prices. He is in the practice of furnishing the propelling machinery, on the most simple plan, and attends to the erection of the whole. Neither his machinery nor workmanship, are of the best kind, as he studies cheapness and simplicity; but on the whole he may be recommended to your correspondents.

"The proportions of the various wheels admit of a great variety of modifications. The essential points are to gin from six hundred to eight hundred revolutions of the rollers per minute, one hundred and twenty-five strokes of the feeding arm, and from twenty-five to thirty revolutions of the fan in the same time. My brother has gone as high as eight hundred revolutions; our velocity here is six hundred. I am about increasing it to eight hundred.

"A double roller gin, with six hundred revolutions, average thirty bushels of seed, or six hundred pounds of clean cotton per day. I have averaged seven hundred and twenty pounds for twenty-two consecutive days. I obtained one day, nine hundred pounds. My brother averages from four hundred to five hundred pounds per day with a single roller gin, having eight hundred revolutions per minute.

"I can recommend Mr. Ball, of New-Haven, Connecticut, to such, as the maker of the best single roller gins that I have seen. The power required to drive one double gin and fan, will be from two to three good horses. With the gin alone, two horses will be sufficient. The hands required will be, boys to drive the horses, a feeder for each gin, a hand at the scaffold, a girl to bring and take away the cotton, and a girl for the fan or whipper. The occasional attendance of a carpenter to make rollers is also necessary. Total, three boys and three girls, all one-quarter hands, and one full hand, equal to two and a half full workers to six hundred pounds of clean cotton.

"When the cotton of the estate of Butler was separately quoted as a superior article, it was ginned entirely by Eave's gin, as were generally the cottons of St. Simon's.

"This gin has been in use on St. Simon's Island for nearly forty years, and is now in very common use in this and the adjoining counties."

The following proportions for the several wheels have been found most effective. They are also furnished by Mr. Couper.

Bevel-wheel 11 feet diameter and 240 cogs. To the king post, of which are fixed arms for attaching the horses; the point of attachment to be 15 feet from the centre of the king-post.

Bevel-pinion 34 cogs.

Spur-wheel 8½ feet diameter and 108 cogs.

Spur-pinion 1 foot in diameter and 13 cogs.

Band-wheel, driving pulleys on the rollers, 3 feet diameter.

Pulleys 5½ inches, on rollers of from 6-8 to 7-8 inches diameter.

Band-wheel, which drives the wheel to which the crank is attached, 24 inches diameter.

Band-wheel, to the shaft of which the crank is fixed, 26 inches diameter.

The band-wheel which drives the pulley of the fan or whipper, 2 feet diameter; the pulley 1 foot diameter.

Having these proportions, the velocities will be as follows:—the rollers will revolve 383 1/3 times for each revolution of the large cog-wheel. The feeding arms will strike 621 times, and the fan arms revolve 14 times. If the horses go twice around per minute, these velocities will be 766 2/3, 125 and 28, which are the proportions to be observed.

At Mr. Gould's on the south end of the island, we saw one of these gins worked by means of the wind,

and by which he got out the whole of his crop. For this purpose he erected a light circular building, fourteen feet diameter at the base, and twelve feet at the top—the height sixteen feet. The whole made of light scantling, shingled from the bottom to the top, and so constructed as to move on a pivot, and be turned around by a lever so as to face any quarter the wind blows from. Near the top an axle is fixed which projects beyond the building on one side, and has the arms attached thereto: these are placed at an angle of twenty-two degrees, and are fourteen feet long; the sails are made of oznaburghs, using four breadths to each sail. To the axle within the house, is fixed a large band wheel ten feet diameter, from which a band proceeds to the whirl fixed on the gin, which sets the whole in motion. The whole building with its fixtures is extremely light. It is true, that it is not always it can be worked, as the winds are the propelling power, but there is no great loss sustained by this, as a boy alone attends to it, spreading the sails, bringing the cotton, ginning and carrying it away. When the wind blows fresh another boy is sent to assist in bringing and removing the cotton. When in operation a bag is ginned in nine hours.

Corn and potatoes are not productive on this island, owing, it is supposed, to the dryness of the seasons and lightness of the soil. We think, however, that this might be greatly remedied by the application of marsh-mud and marsh-grass to the fields. Both of these have been found highly beneficial to such crops, not only on our islands, but also on the main. We know of no manure which causes a greater production of potatoes than marsh cut green, and carried to the cowpen, from whence it is to be removed after it has been well trampled and mixed by the cattle, and become partly decomposed. That it is not the manure obtained from the cattle which causes this effect, will be made evident to any one disposed to test it, by manuring a small spot with green marsh after it has served as a litter for cattle, and another spot, with what is usually employed in the cowpen. It will be found that the first is much the most productive. The marsh may be used without being carried into the cowpens at all, it will not prove as efficacious, but still will be very excellent. It should, however, if possible, be in a partly decomposed state, which is effected by keeping it in very large heaps—when in small heaps it dries without rotting, or only a small portion of it rots. When applied before the texture has become at all broken, the decomposition goes on slowly, especially in sandy soils, unless it be a moist season. For slip potatoes it has proved excellent, and one great advantage is that if followed by corn, the succeeding year no manure need be used. When the object is to improve the texture of the soil, mud ought to be applied. Directions for doing this are to be found in several of the numbers of this Journal, and need not be here repeated.

At Mr. Couper's we saw a very flourishing plantation of young olive trees, containing about two hundred. They appeared to be very vigorous, are from ten to fifteen feet high, and several of them have borne fruit for three years. A small quantity of oil was made from some of them, but the fruit has generally been pickled. We had the pleasure of eating some and found them excellent. These trees were nearly, if not all, imported from France several years ago, and have been found to stand our climate admirably, not being at all injured by the excessive cold of the two last winters. Nearly all the attempts made to propagate the olive, here, by cuttings, have proved unsuccessful, and this has been the case with all others of which we have heard, and we know of several. This appears somewhat strange, when it is known that in Europe it is propagated with the utmost facility. "It is multiplied by all modes that are in use for the propagation of trees, by sowing the seed, by layers, by slips, by cuttings of the root, and by sprouts separated from the trunk, or from the

roots of the parent stock."* And it is said moreover, "that if a bit of the bark with a thin layer of wood is buried in the earth, it becomes a perfect plant."*—Yet, in America, all of these modes have been tried and failed, or so little success has attended them that the culture of the olive is not likely soon to become a favorite. There is no doubt but that it would prove very profitable, and young trees might readily be procured from France—to commence with at least.—It might prove too expensive to form a large plantation of imported trees, but in that case, should we still be unable to discover some mode of propagation, the seeds might be planted, and when the young trees have become large enough, they might be grafted, and in due time, removed from the orchard to the plantation.

In France, it is usual to separate the stones from the pulp, after which they are cleansed in an alkaline solution, and sown in a sheltered situation in March, in trenches two or three inches deep, and covered with earth. "The young plants appear in October and continue to vegetate through the winter. By the following spring the most thriving among them will have attained the height of thirty inches. The feeble stocks should now be eradicated. With proper attention, and in favorable soil, the remainder will be four or five feet high, and six and seven lines in diameter in the course of the third spring, with a perpendicular root of thirty inches. This is the season for transplanting them. Great care should be bestowed upon the preparation of the ground, and the young plants should be placed three feet apart. After two years they will be sufficiently advanced to be grafted, and at the end of five years they may be transplanted to the olive-yard. To accelerate the germination, the stones may be kept in fine mold during the summer and autumn, and sown in the beginning of January. They soon begin to vegetate, and before the following winter the young stocks acquire strength enough to support its rigors, while the tender plant which comes up in October is in danger of suffering by the lightest hoar frost."

The only experiment we know of in this country to raise olives from the stones, was made by Mr. Couper, the account of which is contained in the following extract of a letter received from him a short time since:

"In the fall of 1831, I put some olives under a press and made a little pretty good oil; a part of the seeds or stones I drilled in rows about as thick and covered as deep as we do peas—none came up. I had, indeed, given them up and the patch was covered with crow-foot grass, when a few days ago, my gardener informed me they were coming up. I had the grass drawn out and find them rising as thick as thick as peas do. This experiment shows the facility with which any quantity of olives may be raised from seed."

It was with feelings of deep regret that we here witnessed the destructive effects of the winters of 1830, '31 and early part of '32, on what had been a most luxuriant grove of orange trees. It had occupied a space of twenty-two acres, regularly planted in squares, and bordered with sour orange trees. We do not recollect the age of these trees, but they had arrived at a bearing state, and had produced one most abundant crop and bid fairly, liberally to reward all the care and labor bestowed on them, when the cold of these winters completely blasted all expectations, destroying most of the trees to the roots and some entirely. We walked through the grounds where this splendid grove once flourished. Some few of the trees were standing, but in a wretched condition.—Most of them had, however, been cut off near to the ground, and were sending out vigorous shoots, which may hereafter restore the beauty as well as the profit of the place. The grove was bordered, as we have

already observed, with sour orange trees, and there were several walks formed by them, which in summer must have been very pleasant, as their tops met or nearly met, affording a delightful shade to those who might promenade through them.

Mr. Clarke, in a communication, published in the fourth volume of this Journal, objects to the use of sour orange trees for border screens to sweet orange groves, and states among other reasons that they are not more hardy than the sweet orange, whilst they are certainly injurious to them, and mentions several instances of this injurious effect. It appears to us, that the positions assumed by Mr. Clarke are correct, especially in the deleterious effects on all future groves formed from seedling trees. But from what we witnessed at Mr. Couper's, as well as in this city, we are inclined to think he has been rather too hasty in supposing the sweet orange as hardy as the sour. In this grove not a single tree of the sweet oranges escaped uninjured, and most of them were so severely so, as to induce Mr. Couper to cut them down to within a foot or two of the surface. Yet the avenues of sour orange trees suffered comparatively but little. The manner in which these avenues are formed, is worthy of a passing remark—the trees are in two rows separated about eight or ten feet. They appear to be from seeds drilled in the rows, and left as they came up without any being removed, consequently are extremely thick, varying from six inches to two feet. Yet, notwithstanding this contiguity, they are fine looking trees from fifteen to twenty feet high.

We here saw several date trees, one of considerable height—it is a female and more than twenty-five years old, blossoms annually, but bears no fruit. Several others are in progress, and perhaps, when these shall arrive at a proper age, fruit may be produced, though this is extremely doubtful as the leaves are injured by the frost. At Dr. Grant's (on this island) we saw about forty of them in one of his gardens, they had never done well, only one had borne fruit and that but once. We also saw the black pepper (*piper nigrum*) growing in the open ground in a vigorous state, it was covered up for the winter, and we could not, therefore, have a full view of it. It had grown, we suppose, three or four feet high, and appeared to be in good health. We believe it has never borne fruit, or not more than a few berries, owing to its having been injured by the severities of the preceding winters. From what we understood from Mr. Grant, we are inclined to believe it might be made, with a little care, to produce fruit.

At Mr. Couper's we saw the best collection and the finest vegetables we met with in this excursion. His turnips and cabbages were very fine, and one of the beds of cauliflowers was superior to any we had seen any where that season, some were fit for the table and the remainder promised well. There was one thing we noticed worthy of general imitation, which was a spot of ground planted with cabbages and cauliflowers expressly for the negroes,—(turnips being supplied from the general crop) These were as well attended and as well grown as those in the private garden, nor were the cabbages of the large coarse varieties, but on the contrary, such as were planted for the use of the family. The patch was surrounded by a common rail-fence sufficiently high to prevent cattle from getting in.

(To be continued.)

(From the Genevée Farmer.)

DRAINING

Constitutes an important operation in husbandry, and one in which we are lamentably deficient. Our wet grounds abound in the food of plants and constitute some of our best lands when discreetly husbanded. But in their natural state they will not produce healthy vegetation. The cultivated crops which we attempt to raise upon them are inferior and sickly, and as mere pasture, the grasses are coarse, sedgy and

* Essay on the History and Cultivation of the European Olive Tree.

Indifferent. Infertility is caused by the exclusion from the soil of air and heat, the essential agents in decomposing the food, and in stimulating the growth of plants. Hence the accumulation of vegetable matter in swamps. Draining operates in several ways to induce fertility. By carrying off the water, the soil becomes loose and warm; the food of plants is thereby rendered soluble; stagnant air and stagnant water, alike deleterious to vegetable and animal vitality, are got rid of, and a salutary and necessary circulation is afforded to air and water in the soil.

Grounds are rendered wet and unproductive either by the accumulation or retention of surface waters, or by the supplies of springs, which rise from below the soil. The first are remedied by a main open drain, carried through the lowest part of the ground, and by lateral ones, cut diagonally or at right angles with the main one, in sufficient numbers to drain the ground. The width should correspond with the depth, and the latter should in no case be less than two or three feet, and if practicable should terminate in the hard or subsoil. A drain 3 feet deep, 4 feet broad at top, and one at bottom, exhibits good proportions. Lateral drains may be somewhat smaller.—The earth taken from the drains should be thrown back and spread, or carted off, that the surface water may freely pass into them. If the earth is peaty, or what is termed muck, it affords an excellent dressing for uplands. It is soon converted into food for plants by its admixture with earths, particularly sands.—Care must be observed to keep the drains open, and to remove obstructions to the free passage of the water. An economical method of keeping drains in order is to practice what is called *scurving*. It is performed in the summer months, when showers have produced an abundant flow of water, by men commencing, with loes and spades, at the upper end, and passing down in the drain, loosening or throwing out in the way, the earth and other obstructions which have accumulated there. The current, then, greatly facilitates the cleaning operation.

The business of ditching, like every other branch of labor, is improved by practice and by system. An experienced hand will not only perform more than one who is raw, but will perform it much better. It is important to preserve the slopes entire and unbroken. To do this successfully my practice is, in the first place, to draw a line on the two exterior edges, and to cut the depth of the spade on these lines, in an angle of the intended slope. In the next place the operator takes a spit from the centre, and so far from the outside, that the perpendicular cut shall not disturb the earth below the slope. When the centre is thus thrown out, the face of the slope is then readily and symmetrically formed; and a second spit then taken from the centre as before, and the operation thus continued until the drain is finished. The price of a four feet drain varies from eighteen to fifty cents per rod, according to the soil, and the obstructions which are to be operated upon. The best season for cutting open drains is August and September, because there is generally less water then to encounter, and that the slopes have time to dry and consolidate before the frosts of winter.

(From the Genesee Farmer.)

LEACHED ASHES.

Messrs. Editors: *Potter, April 15, 1833.*

I have known many vessels to arrive at various landings on the Hudson to engage teams and haul leached ashes, from two to six miles, to transport them to Jersey, Long Island and Connecticut.—land, and sell them at from eighteen to twenty five cents a bushel, to be carted from two to ten miles, and used for manure. It is clear then that these men were very much mistaken, or leached ashes are a valuable manure. They are said to have grown rich by it.—I can see, therefore, no reason why they should not be good manure in Western New York. I have my-

self used them for many years, both in my garden and in the fields, and always with satisfactory results.

I believe that leached ashes are as good if not better than unleached ashes, as their fertilizing qualities do not depend on the quantity of alkali contained in them, but on other principles derived from the atmosphere, and that they are as good after lying fifteen or twenty years as if used when fresh from the leaching.

I have said that the modes of applying leached ashes are various. They are applied on the surface, spread and turned in with the plough. In this situation they operate powerfully in reducing the grass and roots to the food of plants; they also attract much fertility from the atmosphere and I believe them to be good on most lands, whether clay or sand, whether moist or dry. They are also used in compost, one load of ashes to two of stable manure, and two of soil, they are also used as a top dressing to corn after the first hoeing; half a pint is scattered over each hill, and has all the beneficial effects of plaster.

Such is my experience and observation on this subject, and remain, Yours, with respect, R. M. W.

HORTICULTURE.

(From the Genesee Farmer.)

VEGETABLE PHYSIOLOGY.

MR. L. TUCKER:

In compliance with your request, I forward you the following essays for publication, in the Genesee Farmer. They were delivered as part of a course of lectures before the Buffalo Lyceum about a year since. They were written in haste and without method, and were intended only to throw out general views, and such information as would draw the attention of our citizens to the subject of embellishing their own grounds with trees, fruits and flowers. Many observations contained in them have been already published in the Farmer, but they are here made necessary, to give a connected view of the subject. Respectfully, yours, ULMES.

ARBORICULTURE.

The science of Vegetable Physiology, if science it may be called, taken in connection with its attendant arts, although by many considered of humble claim to the attention of the community, is yet one of great utility and ornament. Dating an origin nearly coeval with the earth itself, and associated, as its vast family ever has been, with all that we know of the beautiful and sublime, it has long numbered among its devoted admirers names illustrious in wisdom and science. The man of ordinary walk in life, and the more humble laborer, realize in its various productions much of enjoyment and satisfaction, while the fairer part of creation have loved to cultivate with their own hands many favorite productions of the vegetable world.

Poets have sung their praises—sages have expatiated on the magnificence and splendor of their varied productions—moralists have drawn rich truths, and discoursed charming lessons of instruction, from the pure models of vegetable art with which they were surrounded; and much that ourselves possess of virtue and intelligence has been drawn from the study of moral nature. As, however, we do not propose solely to theorize upon the subject before us, we shall at once proceed to take a popular view of the science.

Agriculture signifies the cultivation of the earth for the purpose of obtaining its vegetable productions. As branches to this science, belong arboriculture, or the cultivation of trees—horticulture, or the improvement of gardens, and floriculture, or the cultivation of flowers. The varied productions of all these branches are subjects of the more general science of botany, which

relates to a regular and systematic arrangement of classes, genera, species and relations.

Our present attention will be more particularly confined to arboriculture, or the cultivation of trees. We shall endeavor to show, in a plain manner, the grand operations of nature in forming and rearing her most beautiful and splendid embellishments—their relations to each other, and the different functions of the several parts of the plant—their uses and properties, and how we can avail ourselves of the various parts for the propagation of their species—transferring them from one situation to another—and the very simple manner in which they may be reared to early maturity, embellishment and usefulness; and we most earnestly wish that the whole subject might be rendered “familiar as household words.” that immediate practice should be the result of our observations.

Naturalists have wisely said, that they hardly knew where to draw the line of distinction between animal and vegetable life. The almost innumerable instances of zoophytes, madrepores, and sponges of the ocean, as well as the various family of fungii that we continually see springing from the earth, add to our difficulty in making the distinction; and the abstrusest studies of scientific scholars have only created new doubts in their minds, and more firmly seated their previous ones. Even the power of locomotion, which some have assumed as the basis of distinction between vegetable and animal life, gives no conclusive proof on the subject, so remote may be its power of action.

Irritability in the object has been assumed to mark the distinction; but if the oyster contract its shell upon the touch of your finger, so does the locust and the sensitive plant. The naturalist, even when intently examining what he had fondly hoped a new vegetable of rare appearance or rich promise, has detected brain and spinal marrow! If you assume as a distinction, the multiplication of vegetables by cutting them into numerous parts, and giving each its proper place in the soil, so may you divide the polype-fish into a thousand pieces, and restore it to his native element, each will assume a distinct being, and soon be resuscitated into perfect shape. Many vegetables too have no seeds, and many animals produce no eggs or progeny. The ancient Aristotle, and the modern Boethave, after years of laborious investigation and profound study, declared plants to be animals, merely turned inside out! And the whole collected wisdom of the present day on this intricate subject, after years of patient research, commencing with confidence and hope, have ended in complete doubt and dissatisfaction.

I do not know that we can better illustrate the starting point of distinction, than to take as common and shapeless a thing as a mushroom, the farthest remove of vegetable existence. Let the slightest graduation be made from it on either side into animal or vegetable life. Let these almost imperceptible changes be followed up in successive gradations, each assuming their separate distinctive qualities in a greater degree as they advance, until one had assumed the perfect form of a man; and the other had acquired the finest development of the vegetable world.—This may appear mostly imagination, but in the many gradations that we pass, might we observe the sponge, the coral, mollusca, toad, and so on, through various quadrupeds up to our own fair likeness; and on the other side should we note various rude and uncouth vegetables, gradually waxing into comeliness and form, until the almost perfection of vegetable life had been obtained.

Trees almost universally are propagated by seeds like other plants. In some instances, however, the production of flowers, fruits and seeds, have thus far escaped detection. Yet even in these their existence may have escaped observation, for nature has so many secret stores in her vast laboratory of reproduction,

• Class, *Cryptogamia*—order, *Fungi*.

that where the positive test of sense, or the unerring result of chemistry, is wanting, we can be clearly certain of but little. Seeds, as we all know, are the ultimate ends of vegetable life. They are the perpetuating links by which the innumerable varieties of vegetable nature are sustained, and a minute examination into the tenacious living principle of some of these has been the cause of wonder and admiration. The germinating principle of seeds, and plants of particular kinds, has been ascertained to be capable of full and vigorous development after a close incarceration of two thousand years! Familiar examples are continually accruing, under our own immediate observation, of plants shooting into life from seeds which must have been deposited in the soil many centuries ago. We have only to cast our eyes on the fields around us to witness the white clover, the thistle, the fire-weed, and numerous well known plants, occupying the ground recently covered by the forest. If these productions be supposed to spring from recent deposits of seeds from older fields, go into the deep wilderness, miles and miles from any settlement—cut down a few acres of timber, and apply fire to its extinction,—immediately will come forth grasses and weeds not to be found in the whole region around you.

Do you wish to investigate the matter farther? Let the ground remain, and visit it again at the end of five years. You will find a rank growth of young wood of altogether dissimilar kind to that which had been cut away. Pine often succeeds to the oak, and oak to the pine. To the chestnut may succeed the poplar, and sugar maple the walnut. Or one given kind follow after another in almost endless variety.—These plants we know certainly spring from seeds in the ordinary course of vegetable life, and we have no authority to suppose that they vegetate in any other manner. The seeds from which all these plants spring must have been deposited, no doubt, by trees producing the same kind, which in far earlier time had occupied the same ground, and, for want of the peculiar qualities of soil, atmosphere, humidity or warmth, to nourish them into life, had preserved, through this long stage of dormant existence, their germinating qualities in full perfection.

These facts, to those unaccustomed to inquire into the seeming mysteries of the creative world, may savor of the marvellous, but it is not more remarkable than that a living toad should have been discovered encased in a solid deposit of limestone, several feet below the surface of the earth. Yet such we know to have often occurred. A lifeless mummy, of the times of ancient Pharaoh, after an incarceration of two thousand years in the vast pyramids of Egypt, has been exhumed from its resting place—divested of its waxen cerements, and exhibited to the gazing world, an object of wonder and astonishment. It has been a subject of profound contemplation to the moralist, of abstruse speculation to the philosopher, of delightful recollection to the scholar, and of sublime apostrophe to the poet! But to the inquiring naturalist, it is matter of more absorbing interest to contemplate the history of the humble animal I have mentioned, or to view, expanding into beauty, flowers reared up from seeds which perchance might have bloomed and ripened in the spicy gardens of Solomon.

The *germinating*, or living principle of seeds, is protected by an outer case or shell, and may be preserved as has been remarked, to an almost indefinite time. But to produce its kind, it is committed to the earth in the ordinary process of planting, a course too familiar to need remark. Stimulated into action by the genial warmth of the ground, and excited by the operation of gases and moisture, it wakes into life, and becomes a living plant. By degrees it assumes its specific form and character, and passes from mere vegetable infancy into its perfect genuine state. It is now divided into three principal divisions, of root, stem and leaf, each of which possess their own peculiar functions and properties.

The *root* of a plant may with propriety be termed

its seat of life, as from that its first principles of sustenance are drawn. At the time when the seed first germinates in the ground, the same part of it which throws up the shoot from the ground, also sends into the soil below a corresponding share of root to yield it support. The flesh of the seed, or that part which is attached to the germ, now in a state of decomposition, gives nourishment to the tender shoot until it has acquired strength to draw its sustenance from the earth. The remaining part or husk of the seed, is then rejected, and the soil is its sole support. The root is of a soft and fibrous character, full of minute veins and pores. As it grows in size and vigor, it throws out thousands of minute tendrils, which creep through the best portions of the soil, and serve as so many mouths, or feelers, to collect and absorb food for nourishment to the plant. The roots are provided, like the trunk and branches, with heart, albumen, or in common parlance, with sap-wood and bark. As these grow into main roots, and increase in size and age, they become hard and less susceptible, and merely serve as a support to the trunk and branches, and to convey the food from the younger and distinct portions into the body.

The *heart* is another part of the wood, and constitutes a larger or smaller proportion of its bulk, according to the kind of plant in which it exists. It is porous, but more compact and dense than any other portion of the wood. In young plants it is exceedingly small. As the plant progresses, however, it increases in size from an accession of the inner albumen, or sap-wood; and in time becomes, according to the nature of the tree, the greater or lesser portion of the wood. For many purposes it is considered the most valuable part of the whole. From the smallness of the pores and closeness of the grain, but little sap, or vegetable blood, passes through or is found in it; and for that reason this portion of the tree or vegetable, may, in part, or wholly, decay without serious injury to its growth. It is usually of a brown color, and easily distinguished by its otherwise hard and compact properties.

The *albumen*, being that part of the tree or plant which surrounds the heart, and within the bark, is usually soft, open and porous, and of a white delicate color. In many kinds of wood, such as the poplar, linden, maple &c., it comprises a large proportion of the bulk, while in others, as the red elm, oak, hickory, &c. it is a thin formation around the heart, and is of less utility as an article of timber, but altogether essential to the life of the tree. The sap, which is absorbed from the soil into the roots, passes up through the albumen into the branches and leaves. Trees having a large proportion of albumen are more tenacious of life than those having much heart wood, and therefore serve more valuable purposes for transplanting, and in many instances are exceedingly valuable for purposes of timber.

The *bark* is the outer covering, and composed of strong elastic fibres, interwoven with each other in the most complex manner, resembling often times curiously fabricated cloth. These fibres are hollow, and their office is supposed to be to convey the *elaborated sap* from the leaves down along the body into the roots of the tree, as will be hereafter noticed.—The bark is an essential part of the plant, and without it no vegetable can exist for any length of time. While the full juices of the plant are in operation during certain portions of the year, if the bark be slipped from the trunk, so active is the flow of the sap, and so rapid are its secretions, that a new and perfect bark is quickly supplied. During the summer a new circle of albumen is deposited around the body of the tree, which is no doubt a secretion from the *elaborated sap* through the inner pores of the bark. This is denominated the *grain*, and in ordinary cases the age of a tree may be ascertained from the number of circles or grains lying between the centre of the trunk and the bark. Another very important function is attached to the bark. As the plant or tree

advances in age it becomes thicker, and the outer part ceases to perform its duty of circulating the alimentary fluid, and it now serves for a protection and shelter to the inner bark and wood. It partially becomes an excrecence, and falls in detached pieces from the tree, as is often observed in the shell-bark hickory, sycamore, wild cherry, and the honey locust. A close examination of the formation of barks with a microscope might furnish abundant food for curiosity. Its various and intricate texture, the winding of its attenuated and silken fibres through each other in such sinuous and complicated forms, is a matter of infinite ingenuity and wisdom. How many minds among us all are sensible that the finest thread in a piece of linen cambric, is composed of several fibres, each having a distinct hollow pore, which has served, while blooming in the field, to convey aliment through its system!

The *leaf* is the most ornamental, and not less than others, an essential part of the plant. It is composed of a petiole, or foot stalk, which attaches it to the twig or limb. This petiole is composed of hollow fibres or tubes, and at the point of expansion into the leaf, diverges into an infinite number of minute prongs and branches, which again diverge into numberless threads leading to the extremities of the leaf. These fibres are enveloped in a singularly curious vegetable web, constituting the surface of the leaf. This surface is filled with an immense number of pores, through which it receives its proper food. It is estimated that from fifty to one hundred and fifty thousand of these pores exist in a single leaf. A continual evaporation of moisture and oxygen gas is going on throughout the day from their surfaces, while their food, which is supposed to be carbonic acid gas, is absorbed through the pores of the *under* side of the leaf. These operations will presently be noticed.

All plants, as we have seen, are endowed with organs which enable them to receive, digest and assimilate their food, which is indispensable to their growth, maturity and reproduction. Various and contradictory opinions have been advanced by eminent philosophers and naturalists as to what constituted their true and proper food. Some contended that water was the sole food of plants. Others that pulverized earth constituted it. Others again have asserted that the gases—and others yet, that oils sustained them.—From experiments, however, made within twenty years past, it is more safely to be supposed, that the substances arising from the decomposition of vegetable and animal matter, or *carbonic acid gas*, constitute the true food of plants. This food exists in the soil, in the water, and in the air, which are all more or less charged with it, as they have come in contact with those substances emitting it. When it exists in the soil, aided by caloric or heat, it is conveyed by humidity into the roots; and when in the air, by pure gases into the pores of its leaves and young bark.—Like animals, their various organs perform distinct functions of support. The degrees of nourishment taken by the various parts of the plant differ in many kinds, yet each part has its particular office assigned it.

It is only on chemical principles and personal observation, so far as they go, that we can arrive at certain conclusions in this intricate matter. A few negative propositions perhaps may not be amiss in disproving the above named opinions on the sustaining principle. That *pulverized earths* are not, is evident from no earthly substance being detected within the bark of a plant. Besides, the common earths simply, such as clay, lime, magnesia or silice, aided by air and water, will not support vegetation. *Pure water* will not sustain vegetable life for any length of time. It may indeed sustain it for a while, but when the specific nourishment derived from the water as a component part of its food is expended, the plant will die. *Pure gas* may be subject to the same remark. And the idea of *essential* oils being the sole sustaining principle of vegetation will bear no close investi-

gation. If, however, to the earth's first mentioned, and they are rarely to be found unless more or less mixed, be added vegetable or animal matter, the moment that they receive the impulse arising from the decomposition of that matter into its original elements. (*carbonic acid gas*.) the process of vegetation will commence, and until decomposition takes place, the vegetable principle remains totally inert.

Assuming, therefore, *carbonic acid gas*, operating through the medium of mixed earths, water, and the atmosphere, as the proper food for plants, it remains to observe the manner of converting it into vegetable nourishment. The roots, ramified as they are into numberless attenuated fibres, and buried beneath the soil, acting on the principle of capillary attraction, absorb the moisture from the earth charged with gases, and convey it through the minute pores with which they are furnished into the main roots. During the process of passing through the roots, this moisture is elaborated into *sap*, which passes up principally through the alburnum into the branches and leaves. And here the peculiar province of the leaves is displayed. They are the *lungs of the plant*, and a continual course of respiration is passing on through their numberless pores. A portion of the ascending sap now passes off by evaporation through the surface of the leaves, while from beneath, or the underside of them, *carbonic acid gas* is absorbed from the atmosphere, which, mixing with the remaining sap, and assisted by light and heat, is elaborated into a colored or mucilaginous fluid or blood, denominated *elaborated sap* or *prepared juices*. This is distributed back through the system by another channel, generally supposed to be the inner bark next the wood; and in trees, deposits annually, as before observed, a circle or grain of new wood around the stem or branch.—This blood also produces new branches, roots, leaves, and buds. Bark itself, if young and tender, is partially endowed with the functions of leaves in absorbing food from the atmosphere; being alike supplied with pores—a wise provision of nature in enabling the branches to clothe themselves anew with foliage on extraordinary occasions.

To demonstrate the fact that the vegetable blood, or prepared juices, descends through the inner bark: If a small circle of bark be cut from a branch, unless the bark form anew and unite, the extreme branch increases to a much larger size than that next the stem; because it is continually receiving its due proportion of sap through the alburnum, which is elaborated at the leaves; not being able, by reason of the separation of the bark, to return into the body. The vegetable blood being confined here, will cause an extraordinary accumulation of fruit buds on the branch. Hence the practice of *ringing* the branches of fruit trees, as it is called, to cause a greater production of fruit. This blood also supports the flower and fruit, and ultimately perfects the plant.

That the sap, after passing up from the roots, ascends the wood through the alburnum, is evident from a very simple experiment: If an oak, the alburnum of which is quite thin, be girdled to the heart, it immediately dies. A bass-wood, or maple may be girdled to the same depth, but as they possess a much greater proportion of alburnum, and are of course more tenacious of life, they will perhaps live through the season, and possibly throw out a weak and stunted vegetation the succeeding year; but death soon must follow.

These elaborated juices no doubt give a distinct character to the plant; each of which is distinguished by its own peculiar taste and smell. The pine has its turpentine. The fir has its balsam. The maple its saccharine quality. The butternut its strong coloring and medicinal properties. Why these characters are given them, is one of the yet untathomed secrets of nature, and like the causes of color in flowers, is hidden from our knowledge.

For immediate practical advantage, and to aid the planter in his operations, the following observations, partly of repetition, may be proper:

The earliest food of plants is absorbed by the roots, and there being elaborated into sap, ascends through the alburnum of the stem and branches into the leaves. It is then, in a certain portion, evaporated through the pores of the *upper surface* of the leaf: the remainder is then elaborated by the action of carbonic acid gas, absorbed through the pores of the *lower surface* of the leaf and new twigs of wood, into vegetable blood, or prepared juices, and then descends through the inner bark again to the roots. This prepared juice also supports the flower and fruit. To show how necessary the several parts are for the support of each other: If a portion of the roots be cut off, the growth is checked. If the plant be stripped of its leaves, the same result is observed. The growth of a plant is promoted in proportion to the quantity of sustaining matter it may receive. If the soil be heavily charged with rich deposits, a vigorous growth is the consequence; and the more open, free, and generous the soil, in so much greater proportion will its growth be accelerated. If a superabundant portion of vegetable food be mixed with the atmosphere, the effect of its influence on the growth of the plant is in proportion; and hence may be accounted for the huge tops of many trees in the streets of our cities, which are supported by such slender stems, and whose roots are sustained beneath a pavement. We observed that the living principle is excited by heat. In the spring, on the approach of warmth, the juices of the tree are found, by the chilling influence of winter, condensed and lifeless. The sap is now started into life, and increasing warmth infuses animation into the whole vegetable system. Through the summer, the various functions of the plant are performed, and its growth perfected. In autumn, as its powers are expanded, its active functions slowly terminate—a great portion of its sap passes off by evaporation, and the leaves fall to the ground; and in process of time return to their original elements to give new life and action to the beautiful structure which they once aided to adorn. So is this admirable operation of nature carried on from one change of season to another.

From the foregoing observations, the arborist will readily understand the governing principles that should guide his operations. It therefore remains to drop a few hints to govern the immediate selection, removal, and planting of trees:

1. Those trees having a large portion of alburnum in their composition, are more tenacious of life; are earliest in leaf in the spring; retain their foliage latest in autumn; and are generally of more rapid growth than those kinds which have the greater proportion of heart wood.

2. In taking trees from the earth, great caution should be used to prevent injury to the roots and trunk; and as many of the fine roots as possible should be retained. Should they be broken and imperfect, they should be smoothly cut off with a knife.

3. In all cases when a tree is transplanted, let the top bear a due proportion in size to the root; each being a mutual assistance to the other in perfecting its growth.

4. In selecting trees for transplanting, *never* take them from a dense, high forest, when they can be otherwise obtained. Owing to their local situation, they have few roots, and those long and straggling; their tops are proportionably slender and thin; and being accustomed to the deep shade of the surrounding trees, and for want of acclimation, they in most cases die when exposed to the heats and winds of open grounds.

5. Trees for transplanting should in all instances where practicable, be selected from open, exposed situations, where abundant opportunity was given them for an expansion of root and branch.

6. Let the soil into which they are transplanted be as near as possible like that from which they were taken; but if poor let it be enriched.

7. Let the hole for receiving the tree be two or three feet larger in diameter than the roots, in all cases.

Let it also be at least a foot deeper. Fill it partly up with good light soil. Set the tree so that it shall stand when planted, not to exceed two inches deeper in the ground than it stood originally. Let one person hold the tree firmly in its place, while another throws carefully the earth, well pulverized, and made rich, on to the roots.—Let it be gently swayed back and forth while filling up, that the earth may mingle well with the roots; tread it firmly around the stem when finished; then secure the whole with good and sufficient stakes; and in nine cases out of ten, the tree will live and thrive apace. Whenever practicable, turn the wash of the roads, or from other places, on to them. It accelerates their growth in a superior degree to any other nutriment.

That so great a number of trees which are annually planted in our streets and open grounds perish, is from the neglect of the rules thus laid down. In many cases the planter is profoundly ignorant of the subject; and in others, too sparing of expense or labor in planting. In all cases where it is *determined* that trees *shall grow*, true economy would dictate the planting on strictly scientific rules; as in all cases of failure, the labor has to be renewed, and the growth of the tree is lost.—Common sense, therefore, as well as prudence in expense, requires a practised hand in making all plantations.

In cases of stunted and imperfect growth, and where trees are infested with moss, the only resort should be had to the soil and roots, and scraping the stem and branches clean, and washing them with lime water, or other strong fertilizing mixture. If the soil be hard, or sterile and worn out, let it be extensively loosened with an iron bar, fork, or spade. Let rich compost be dug in; water applied; and occasional attention bestowed; and the plant will forthwith renew its vigor and growth. The vulgar opinions of splitting the bark, clipping the branches, or in fact, any thing but the application of wholesome stimulants, except in cases of disease, is worse than idle.

A few general remarks will close the subject.

A love for the cultivation of trees, has often been remarked as evidence of a refined and enlightened mind. At an early period of the world, they attracted the care of the husbandman; and they are named in terms of commendation by the earliest writers. The man of science, as well as the philosopher, has devoted years of study to inquire into their hidden qualities, and to discover their natural history. The world has been traversed to find out new species; to ascertain new facts in their development, or different properties in their composition. They are made subservient to our use in various ways, and from their bark and leaves are obtained many of our drugs, our ornaments, our physics, and our dyes.—From their woods are derived many of our choicest comforts of food, raiment, habitation, and fuel;—and who, of natural and animated feeling, but loves the association of their name?

Healthy, well formed, stately trees may truly be called the finest models of vegetable creation. They are every where—in all lands, and among all people, subjects of deep, delightful study. They have been planted, nursed, and trained with almost paternal care. Their cool and pleasant shades, their classic forms, their splendid flowers, their magnificent foliage, and delicious fruits, have administered to the pleasures of the sense; and the contemplation of their majestic verdure, standing apart, or in groups, amid the quiet landscape, a silent yet living monument of the vast opulence of creative power, has often led the mind into the most sublime and solemn reflections.

The Roman Virgil sung the sweetest verses of his Georgics while basking in the groves of his own sunny Italy. The poet Milton loved to meditate beneath the deep shadows of his native trees, and some of his rarest numbers were breathed in admiration of their beauty. The amiable Addison drew many of his most instructive meditations while musing beneath the mighty elms of the Covenly domain. The classic Thomson,

while luxuriating in the repose of "Woody Richmond," and stretching out his lazy length "to pore upon the brook that bubbled by," built his gay castles in the sunny clouds, and wrought out those splendid images that surround his "Castle of Inguenoe." Even the great bard of Avon, "the noblest Roman of them all," has drawn his sweetest discourse from the lips of the noble, melancholly Jaques, as he sat soliloquizing amid the deep forest of Arden.

Our own country too, has furnished rich examples of devotion to the beauties of vegetable nature. The illustrious Washington often declared that his purest pleasures were derived from contemplations among the groves of his own shady Vernon. The philosophic Jefferson received the homage due to exalted genius, surrounded by his native oaks at Monticello. And Patrick Henry, the Demosthenes of America, in his declining age, loved to sit in the warm summer evenings, under a mighty Black Walnut that stood before his dwelling, and give sound lessons of instruction to his friends and neighbors in the science of free government.

Even savage man is feelingly alive to the remembrance of his native trees. With what delight does the swarthy Ethiopian view, while afar off, his magnificent Palm trees, on returning from his journeyings in the desert! How grateful is the heart of the simple Hindoo while enjoying his repose under the far spreading branches of the Banyan! And with what unconquerable love of liberty does the Canadian savage leave the haunts of civilized man and seek his rude dwelling among the giant Pines of his native forest!

Who then possessed of means and opportunity, would neglect to embellish his grounds, and perform a sacred duty to himself and his fellow men by planting a few trees, and rearing them up, green perennial monuments to transmit his memory down to a grateful posterity? The occupation is surely a happy one; and the time devoted to their culture might all be drawn from that too often spent in idle pleasures or trifling amusements. Their cultivation excites the mind to a love of study and inquiry; and a walk beneath their cool shadows has often administered consolation to the bowed down and afflicted. They afford a shelter from the oppressive heats of the sun, and from the violent winds and storms which often assail us. They beautify our dwellings, our grounds, and our streets. They give an appearance of wealth, hospitality, and domestic enjoyment to our possessions which nothing else can supply.—They also, by the process of absorption, carried on through their foliage, relieve the atmosphere of those noxious gases which float up from impure accumulations, and which might otherwise be injurious to our health.

Let every one then, possessed of ground, immediately commence a duty so interesting in its performance, so beneficial to ourselves, and so useful to our successors. Let the waste places be made glad, and the naked hills be clothed with verdure. Every spring shall see them put forth their green leaves, and the air shall be made fragrant with their opening blossoms. To the wayfaring man shall their sight be most refreshing, "like the shadow of a great rock in a weary land!" The earth we possess is beautiful in its soil and its verdure; in its rocks and its waters; and to add new charms to its surface, may well be called a virtue. With what serene pleasure does the good man in the evening of a well spent life, walk out under the broad shadow of the trees he had long ago planted! How cheerfully does he gaze upward at their spreading branches which his own hands have fashioned, and which shall in future ages invoke blessings on his beneficent head! And with what calm solemnity does he look forward to the time when his own lifeless trunk shall be carried out for sepulture beneath their leafy coverings, then throwing over his remains a magnificent funeral canopy!

Let the cultivation of trees become more established in our country, and instead of the bald and cheerless appearance of many of our farms and villages, cool,

delightful shades would greet the eye. Pleasant, calm retreats would offer consolation to the troubled spirit. Majestic columns of splendid vegetation would throw aloft their whispering foliage, and spread their shadowy arms over our peaceful dwellings; and thus, by our own kindly assistance, render our clustering habitations and gardens like so many Edens scattered through the land.

RURAL ECONOMY.

(From the Virginia Farmer.)

ON CUTTING DOWN AND CLEANING UP THE MARGINS OF RIVERS AND CREEKS, &c.

MR. McROBERT: *Spring Hills, April 8, 1833.*

I have thought that probably a few remarks upon the subject of cutting down and cleaning up the margins of rivers and creeks, together with some hints in relation to straightening creeks and branches, might find room in the Virginia Farmer.

For the last six or eight years I have been but seldom from home, at least so far as to be out of hearing of my own dinner horn, but within that time, (previous to that I never noticed such things,) I have seen farmers bordering upon rivers, or enclosing creeks with standing timber—trees of all sizes on the banks. Upon inquiry, it would be told me that they were left there to keep the banks from washing. Now this is a great mistake—I speak from experience.—Trees growing upon the bank shade the ground and prevent the perennial grasses taking possession so as to form a sod impervious to water, which would be the case if the trees were removed, and not only kept from washing, but every fresh would leave more or less deposite, until finally, as much land may be made into the river, as the width will justify. At particular situations, where the water, owing to a curve in the stream, may have an unfavorable bearing, a small willow growth in the water's edge may be admissible, to form a base for the bank, i. e. to prevent an abrupt or perpendicular bank which is never secure. The banks must be brought to a gentle and regular slope, and then, if they are permitted to stand to grass, they will be gaining something every freshet. By attending to the above precautions, I have made several corn rows along the river bank within the last seven or eight years. On the other hand, when the trees are standing, they not only obstruct the current to the amount of their own magnitude, but catch large quantities of drift wood, forming hammocks which produce a whirling and dashing about of the waters, washing up large holes at different places, and causing great inequality of the banks; and last, though not least, often throw the main current into the adjoining low grounds, taking off the improvement of many years at one single freshet. In addition to all this, the crop is injured by the shade from these trees, to say nothing of the loss of ground on which they stand. It is true, an overwhelming freshet is a formidable opponent: for that reason, let it pass as smoothly and uninterruptedly as possible and it will do you the less harm, and indeed (save the fencing) if your grounds should chance to be fortunately situated (clothed in grass) at the time the freshet comes a great deal of good. To this end keep every thing that is capable of offering any resistance to water, cut clean. In felling the native growth, cut as low as possible, especially such as is of lasting quality.

What I have said of river banks, will apply with equal force to creek banks, or those of small streams running through our fields.

A word now as to the manner of straightening creeks and branches. Some times in doing this work it is desired to turn as much low grounds into a body as possible, and for that purpose, the stream is conducted to one foot of the hill or the other, and for the furtherance of the object depart from a straight direction, winding with the hill. Now unless this hill is

a cliff, or certainly never to be cultivated, this is also a mistake, for in working the hill, every move given to the dirt it tends towards the branch, and there being no resting place, is finally lost in the branch.—When it is desired to change a stream where the opposite hill sides are cultivated, it is generally best to conduct it (having due regard to continuing a straight course as far as possible) as near the centre of the vale as may be convenient, in order that if any thing be lost off the hills, the bottom may catch it.

It is the practice with some farmers when they change a creek, to make permanent and high dams at every place where the new crosses the old way, in order to force the water in tides to go the new way.

I think I have profited by a contrary practice. I make very slight slopes, if any at all, so that when the water comes, the strong current (which carries the heaviest and poorest alluvion) may take the new straight way, and the weak current (which carries the richest and best) take the old way, thereby depositing a quantity of sediment towards the speedy filling up of the old bed, and when once filled up by these means, will be land of the first order. But if you shut the water entirely out, should you want it filled up, you must go and haul dirt.

I must come to a close, but first I must be permitted to offer an apology to you, and to the readers of the Farmer, for troubling you with my poor communications. It is this: We have all heard it said, "Now the ice is broken," &c. I have, Mr. Editor, broken the ice, in hopes that others (and many there be) who must know that I am not able to teach even what I might know, would take the subjects in hand. If so I know I should be amply paid for my labor of writing, though, to me, rather an irksome task. And now (I believe I am at the right place in my scroll) I must take occasion to congratulate you, and your readers, on the addition lately made to your best of correspondents. I mean "A Buckingham Farmer." His "Fire-Side Reflections" is the best article, as far as it goes, that I have seen. Do request him to give us his practice in minutia. I should be glad he or others would say something about the best mode of draining wet land—such I mean as has many springs which are to be ditched out, and then secreted to an open drain. The difficulty with me has been this: After ditching so as to take in all the water, and blinding, (as we here call it,) either the blinded part would stop up after a few years, or the water would rise in another place so as to render the land wet about those springy places. I would like to know the best mode of blinding or secreting ditches.

I have several objects under consideration, but am much engaged about this time, having just commenced ploughing my corn lot, and it now affords plenty of grass for twenty head of cattle when the ground is dry enough for them to be on it. I expect if you were to see it, you would be scared for me, but by the blessings of heaven, I don't fear yet.

I am, respectfully, yours, JAMES T. JONES.

SIR ARCHY.—This famous horse has cleared for his proprietor (independent of his achievements on the turf) \$70,000. He is still living, but in the extremity of old age, (in the 30th or 31st year.) His vigor is extinct. He has not shed his hair for several years, and it has grown to the length of two or three inches. A gentleman who has lately seen him, says, that of all animals, he is the worst looking, and would be the last taken for the most celebrated horse of the age.—His owner treats him with all possible kindness, as it would be unpardonable, indeed, if he did not. Provider without stint, at rack and manger, and a soft and delicate bed, proclaim the proprietor's gratitude. The door is left open to allow his egress and ingress at pleasure, but it is observed that Sir Archy only comes out to drink, and having done so, immediately returns to his stable. Except those of the finny tribe, it is conjectured that Sir Archy's posterity outnumbers that of any living animal.—*Richmond Whig.*

THE HORTICULTURAL SOCIETY OF MARYLAND,

For the diffusion of Horticultural Science and the Improvement of the Art of Gardening; Associated Nov. 20th—Incorporated by act of the Legislature, at December session, 1832.

The Council of this Association have resolved to open the public proceedings of the Society, by an Exhibition of Plants, Flowers, Fruits and other Vegetable productions.

The Exhibition will be opened on the eleventh day of June next, and will continue during that and the following day.

On the eleventh of June, popular lectures will be given in the hall of exhibition, and on the twelfth the society will hold a public meeting, when an address will be delivered.

In furtherance of the views of the society, the Council have resolved to offer premiums to the aggregate amount of one hundred dollars, to be awarded to the finest objects exhibited, by a committee of Judges appointed for that purpose.

The following gentlemen have been appointed to act as committee of arrangement, viz: H. F. Dickhut, chairman, Z. Waters, Geo. Fitzhugh, James Moore, Edward Kurtz, I. I. Hitchcock, Sam. Feast, John Feast.

All who feel interested in the advancement of Horticulture, are invited to lend their aid in furtherance of this design. Those wishing to exhibit plants or other objects of Horticultural interest, will please communicate their views to the committee of arrangement, stating at the same time the articles they design to exhibit.

Letters on the subject, must be addressed to the chairman of the committee, from whom any further information may be obtained.

May 3.

Prices Current in New York, May 11.

Brewer, yellow, 18 a 20. Cotton, New Orleans, 11½ a 14½; Upland, 10½ a 12½; Alabama, 11 a 14. Cotton Baggins, Hemp, yd. 13 a 24½; Flax, 13 a 14½. Flax, American, 7 a 8. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.50 a 5.75; Balt. How'd st. 5.50 a 5.71; Rh'd city mills, — a —; country, 5.50 a 5.62; Alexandria, 5.50 a 5.62; Fredericksburg, 5.50 a —; Petersburg, 5.50 a —; Rye flour, 3.75 a 4.00; Indian meal, per bbl. 3.75 a —, per lhd. 16.00 a —. Grain, Wheat, North, — a —; Vir. — a —; Rye, North, 76 a 78; Corn, Yel. North, 73 a 75; Barley, 68 a 70; Oats, South and North, 45 a 46; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, 7½ a 9.

200,000 WHITE MULBERRY TREES.

The Subscriber has on hand and for sale 200,000 White Mulberry Trees of two and three years' growth, which have been transplanted, are in a healthy and thrifty condition, and which he offers for sale at \$1.50 and \$2.00 per hundred, delivered at the nursery.

Also, a few of the Morus Multicaulis, or Chinese White Mulberry.

ASA BUTLER,

Suffield, Connecticut.

P. S. All orders (post paid) will be punctually attended to. April 12,—bt.

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine WHITE MULBERRY SEED.

MAMMOTH PUMPKIN SEED.

EARLIEST FRENCH CABBAGE do.

EARLY FRENCH, or PARIS WHITE ONION do.

ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

I. I. HITCHCOCK.

PUBLIC SALE OF DURHAM SHORTHORN-ED CATTLE AND HIGHLY IMPROVED SHEEP.

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEIFERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

April 5,—St

DAVID MEADE, Administrator.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at 75 cents per bushel.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

SINCLAIR AND MOORE'S NURSERY.

The Proprietors are about to clear a part of the ground, now occupied with white Mulberry Trees, in order to plant other articles, to which the exposure is peculiarly adapted, in consequence will dispose of them at very reduced prices;—after these are sold the regular price will be ten dollars per hundred for trees eight to ten feet high.

They also offer for sale at reduced prices an extensive assortment of Ornamental Trees and Shrubs, fifty kinds of hardy Rose Bushes, (among which is the much admired Greville,) double Altheas, Honeysuckles, Corcorus, Lilac, Snowberry and Buffalo Berry Trees, Chinese Alanthus, white flowering Horsechestnut, and silver leaved Maple, all of large size, (the latter is a beautiful shade tree,) large red and white Dutch Currant, red and white Antwerp and other Raspberry Bushes, Strawberry Plants assorted, (large plants raised carefully for sale,) white and black Walnut, Quinces assorted, Peach Trees, a large stock of very superior kinds, Apple, Plum, Pear, Cherry and Nectarine Trees; Grape Plants and Cuttings of several varieties, Asparagus and Hop Roots, and Thorns for hedging.

Apply at the Nursery, or at their store, corner of Pratt and Light streets. Feb. 22.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythies, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.

Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—We have not the slightest alteration to make in our quotations of country produce, except a trifling one in corn. The wagon price of Howard street flour remains at \$5.25. The receipts of grain are quite limited, and fall considerably short of the demand, which will account for the price of wheat being rather disproportionate to that of flour.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 5.00. The inspections of the week comprise 854 hhds. Md.; and 122 hhds. Ohio—total 976 hhds.

FLOUR—best white wheat family, \$6.75 a 7.25; super Howard-street, 5.37½ a 5.50; city mills, 5.50 a 5.75; city mills extra 5.50 a 5.75;—CORN MEAL bbl. 3 62½;—GRAIN, best red wheat, 1.20 a 1.25; white do 1.30 a 1.35;—CORN, white, 62 a 63, yellow, 65 a 66;—Rye, 75 a 77;—OATS, 37½ a 41.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED 8.00 a —.—TIMOTHY, — a —.—ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.00 a 2.50.—Herd's, — a —.—Lucerne — a 37½ lb.—BARLEY,—FLAXSEED 1.50 a 1.62.—COTTON, Va. 11 a 13.—Lou. 12 a 13½.—Alab. 11½ a 13.—Tenn. 11a 12; N. Car. 11½ a 12; Upland 11 a 12½.—Whiskey, hhds. 1st p. 29½ a —; in hhls. 31 a 32.—WOOL,—Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18. Hemp, Russia, ton, \$195 a 205; Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 37½.—Plaster Paris, per ton, 4 25 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.50 a 6.25.—Oak wood, 3.00 a 3.25; Hickory, 4 50 a 5.00; Pine, 2.25.

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Editorial; The Drought; Dahlias—The Compass Plant—Wash for Fruit Trees—Locust—Account of an Agricultural Excursion, made into the South of Georgia, in the Winter of 1832, by John D. Legare, Editor of the Southern Agriculturist—On Draining; its Advantages and Practicability—On Leached Ashes as a Manure—Essay on Vegetable Physiology, read before the Buffalo Lyceum, New York, by Lewis F. Allen; Vegetable Life; Vitality of Seeds; Germinating Principle; Root; Heart; Albumen; Bark; Leaf; Food of Plants, how converted into Vegetable Nourishment; Selection, Removal and Planting of Trees; General Remarks—On Cutting Down and Cleaning Up the Margins of Rivers and Creeks, and Straightening Creeks and Branches—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

The American Farmer,

Edited by GIDION B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

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THE FARMER.

BALTIMORE, FRIDAY, MAY 24, 1833.

VINE DRESSERS, will pay attention to the advertisement of Mr. Henderson, on our last page. If the extent of the vineyard be considered sufficient for a beginning, (about two acres,) we think, all other circumstances will be found perfectly satisfactory to one skilled as a vigneron. The situation is very healthy; and the location one of the most desirable that our country affords, for the economical and pleasant maintenance of a family.

FARMERS AND OFFICE.—There is so much good sense in the following article, written by Judge Buel, of Albany, that, though not as practical as we could desire for our editorial page, we have thought our readers would be pleased with it. No man is a better judge than Judge Buel, of the evil tendency of a thirst for office, especially among farmers.

HINTS TO FARMERS.—Offices are created for the public, not for the incumbents. They nevertheless constitute fruitful rewards to merit; and, when spontaneously conferred, are among the highest honors that a free people can bestow. To *deserve* them is worthy of your ambition; but to *depend* upon them, as a means of livelihood, would be unreasonable and unwise, if not dangerous. A thirst for office is almost as bad as a thirst for rum. The more either are indulged, the more craving they become. Every repetition of the potion but begets new desires, until, finally, the passion, in one case, terminates in *delirium tremens*, and, in the other, in *delirium cordidum*. I have known many a worthy man ruined in his usefulness and in his fortune, by this latter disease, and ultimately terminate his career under the complicated horrors of both maladies.

In selecting your public agents, adopt the same caution that prudence would suggest in your private affairs: choose those who are acquainted with the business in which you mean to employ them,—who know your wishes and your interests,—who have an established reputation for integrity, and who have shown an ability to manage a public trust, by having conducted creditably and successfully their private affairs. Such men possess civil virtues, and merit civil rewards. But distrust the man who reiterates his importunities for your vote or your influence, as wanting either good habits or good principles. The first should render him independent of public aid, and the last should make him ashamed to ask for it.

Are we then to reject, as the bane of our happiness, the honors and emoluments of office? Not accept them, when proffered, as a mandate of duty, not as a source of wealth; as a compliment to your merit, and as the requital of an obligation which you owe to society. Accepted in this spirit the duties will not seem onerous, nor the emoluments worthy your exclusive regard. And when you have enjoyed the honors, and fulfilled the duties, abandon neither your politics nor your religion, because your fellow-citizens happen to discover in your neighbor qualities and merits equal or superior to your own. The spirit of a free government forbids monopoly. Whether they impose a duty, or confer honor or profit, offices should be shared by those who are capable and worthy; and I do not know of a more salutary provision which would be engrafted on our constitution, than that which has been thrice forcibly recommended by our illustrious President, to limit the tenure of office to some definite period of time.

I will also close this number with the history of a schoolmate;—*Job Allerton*, commenced life under the most flattering auspices. His farm was a pattern of neatness—fields well cultivated, cattle in fine order, and fences and buildings in good repair. Job owed no man, and had accumulated a fine sum at in-

terest. His children were growing up under their parents example in habits of industry, and promised to become respectable in society. Every thing thrived under his care, and he was pointed to by all as the best farmer in the town of S. His good qualities, and the influence which these procured him, at length brought him into political notice, and he became a successful candidate, very much against his will, for the Assembly. He returned from Albany in the spring, with some new notions, but the habits of the farmer still predominated. To a second nomination Job had less objection, nay, he secretly intrigued for it; for he thought, as he remarked, he was then qualified to do some good. The second triumph, and the consequence it gave him at the dinners and parties in the renowned capital turned his head, and he came home quite an altered man. It was no longer "Come, boys," with him. Politics engrossed his whole attention. He became a standing candidate for every office that presented; and was in succession—sheriff, senator and member of congress.

In the mean time the farm began to show the absence of the master; the fences were prostrate, the cattle neglected, and the buildings verging to ruin. The boys too, as boys ever will, aped the father, began to strut the gentleman, and to look up for office and dignities. As industry departed, prodigality entered, and soon wasted the frugal earnings of former years. At length the illusion vanished. Allerton found himself deeply in debt, without means and without office, with an indolent, extravagant family to support. Offices had ruined him. In his distress he mustered resolution to do what hundreds have failed to do, and who have done worse. With the wreck of a former competence, he pulled up stakes, and leaving behind him his official habits and official pride, fled to the wilds of Indiana, where I am happy to say, he has resumed again the habiliments of the farmer, and is profiting by the lessons of experience.

Who is there that among his acquaintance does not recognize a Job Allerton? B.

SPLENDID FLOWER.—The Greenock (Scotland) Advertiser, gives the following description of the *Cinnamabale*: "The plant is a native of the East Indies, and measures one foot eight inches round the stem; leaves from three to four feet long, and six inches broad; flower-stalk three feet long; the flower is one foot six inches in circumference; umbel flowers at the top one foot eight inches in diameter; the flower changes from a crimson to a beautiful pink color, which surpasses that magnificent exotic, the *Doronic excelsa*, which the late Mr. Henderson, gardener at Woodhall, was so successful in flowering."

ENGLISH WEATHER AND GARDENING.—The London correspondent of the Auburn Free Press, mentions as a remarkable circumstance, that on the evening of January 6th, the moon was distinctly visible for several hours, and thousands sat up to enjoy the sight. The weather has been extremely mild, till within a few days. On Christmas day wild strawberries were picked in Uxbridge, and on New Year's eve flowers were gathered in a spot as little sheltered as any in Falmouth. I have just seen a description of the manner of cultivating the land here, which may be interesting to you. In the immediate vicinity of London are 10,000 acres of land used for the growth of what is called garden stuffs—2,000 of which are cultivated by the spade. "Shortly after Christmas when the weather is open, radishes, spinach, onions and all other seed crops are sown, and as soon afterwards as the season will permit, which is generally in February, the same ground is planted with cauliflowers from the frames, as thick as if no other crop then had possession of the ground. The radishes, &c. are soon sent to market, and when the cauliflowers are so far advanced as to be earthed up, sugar loaf cabbages are planted; when these are mar-

keted, the stalks are taken up, the ground cleared and planted with endive and celery. The average produce of these gardens is supposed to amount to \$888 00 annually, per acre." The annual produce of all the garden ground cultivated to supply the London markets was estimated by Mr. Middleton at \$2,853 800 which with \$1,776,000 00 produced by the fruit gardener, makes a total of four millions, six hundred and thirty-nine thousand, eight hundred dollars, for the consumption of the metropolis in fruits and vegetables only.

TOBACCO—INQUIRY.

MR. SMITH: May 16, 1833.

A Virginian planter, would be greatly obliged if he could obtain some information through your valuable paper, on the subject of the tobacco culture, as pursued in Prince George's county, Maryland, embracing the raising of the plants, with all the process of cultivation, curing and pressing.

(From the New England Farmer.)

REMEDY AGAINST THE BEE-MOTH.

FRIEND FESSENDEN: Mansfield, 6th mo. 4th, 1833.

There has been much said concerning keeping the grub worm (so called) from the bee hive. The mischief is done by flying insects, called millers, which visit bee-hives in the autumn. I have not marked the time particularly; but according to my observations, it is but a few days, in which they make their ravages. These millers deposit their eggs in the hive. The eggs hatch and become worms, which destroy honey and swarms. The millers come between sunset and dark, or after it becomes somewhat dark, and the time in the evening in which they make their efforts, is not more than half an hour. This being the case, I took my small earth furnace and placed it near the bee hives, in order to attract the millers to the fire, which I made in it. But I found that it had the contrary effect. It dispelled them. I have done this two or three years with success, and have had none of the grub worms in my bee hives since. More particularly—set the furnace, say two yards from the hives, and make in it a fire of shavings or any light fuel, so that the light may shine on the hives. If the wind should blow the smoke on the hives too much, set the furnace farther off; but previous to all this let the mouths or doors of the hives be stopped except on the front where the fire shines.

This is of considerable consequence in economy, and I wish those who keep bees to prove the experiment; and when I shall hear from them, I shall say more about bees—but one thing at a time.

LEWEL GROVER.

ROSES—Lovers of these, the queen of all flowers, would be gratified by taking a pleasant ride of three miles east of the city, by the Bellair road, to Sinclair and Moore's Nursery, where they may have an opportunity of seeing a very large collection of roses (especially the hardy kinds) now in full bloom, affording the best opportunity of making selections against the transplanting season. The other departments of their Nursery, seed raising, and farm, would also be amusing and interesting at this pleasant growing season, where large crops of the following vegetable seeds are now ripening, the purity of which may now be examined: Large white flat and purple top turnip, parsnip, carrot, beet, radish, rape, ruta baga, spinach, onion, &c.

S. & M.

FOREIGN MARKETS.

LIVERPOOL, April 5.

Cotton—Dealers and spinners are yet holding back a little in fear of blowing up prices, and this has caused holders to offer their stocks more freely. The sales are near 3,000 bags, steady prices, consisting mainly of American descriptions, ranging from 7 to 7½d; except 100 Bahias at 8½ to 9d; 25 Surats 4 5-8 to 5½d; and 50 Madras 6½ per lb.

AGRICULTURE.

HORIZONTAL PLOUGHING, AND HILLSIDE PLOUGHS,
AGAIN.

MR. SMITH: — Virginia, May 7, 1833.

From the tone of your editorial remarks, in reply to certain queries on the subject of "horizontal ploughing, and hillside ploughs," which appeared in your eighth number, I am led to believe, that you have misapprehended either the purpose or meaning of the letter which conveyed them. That letter was certainly written with no view of detracting from the just merits of any one—and though penned in haste, I cannot but think, on a second reading, that it carries on its face the design (if there be one, separate from the simple desire of being informed as to the history of a much valued improvement) of bestowing honor where it is properly due.

Neither is this a question of *gratitude*,—as we both probably concur as to the superiority of the mode and instrument of tillage, introduced by Gov. Randolph, over those before used for the same purpose,—and I have but to repeat the remark of my former letter, "that if he was the original inventor of them, he merited the thanks of the whole agricultural community, and perhaps not the less if he *merely* introduced them, and improved the construction of the latter" so as to render it more valuable.

We certainly, however, differ as to some general views, and one or two minor points; which latter, in truth, were the *gist* of my queries. I did not suppose myself to be in possession of all the facts on the subject, or I should scarcely have withdrawn your attention from matters of greater importance, to gratify, what is, perhaps, an idle curiosity. I will confess, however, that my former impressions were somewhat different from your own, as it respects the history of this matter, and will present some of the authorities which induced them. It was unknown to me, that Columella, had recommended the practice in question, and the information is, in so far, an answer to my former communication—inasmuch as it traces the theory, at least, to a higher point, than I had before read of. I had often admired this plan of culture, and reflected with pleasure on the agency which it has already had in repairing the desolation caused in some parts of this state by the opposite mode. Foreseeing yet greater benefits, as I thought, from the introduction of a farther improvement, I felt grateful to the individual, who, as I then supposed, was its first inventor, and who certainly first impelled the minds of American farmers in this direction. It was not unnatural, then, that my attention should be arrested by such a passage as the following, in a work which was in my possession. As it is the only copy of it which I have seen, and as I do not find it in London's catalogue of agricultural writers, I will add the title, so that you, or some of your readers, may verify the extract, should you meet with it. It is a small duodecimo volume, and purports to be written by a lawyer, who had deserted the bar, for the more profitable employment of farming. The author professes to have *practised* the precepts of his book which embodies in a lively and perspicuous style, the then existing improvements of English agriculture, and is not the only tribute of a retired lawyer, to the nobler profession.* Its title is as follows: "A new system of agriculture, or a plain, easy, and demonstrative method of speedily growing rich; proving by undeniable arguments, that every landowner in England, may advance his estate to a double value, in the space of one year's time. Together, with several very curious instructions, how to feed oxen, cows, and sheep, to much greater profit than has ever been known in England." London, printed for A. Miller, 1755. This *portico* to his structure is rather in the style of that day, but like other

porticos it might serve to attract attention to that, of which it was the mere appendage. As the mottoes are somewhat quaint, they also are subjoined.

"The only gentleman-like way of growing rich, is by the art of husbandry. All other professions have something in them of the mean and subservient.— This alone is *free*, and noble; and the wealth thus gotten may alone be said to be of a man's own creating."

Gooze of Husbandry.

"Male agitur cum Domino, quem riticus docet."

Cato de Agricultura.

This latter maxim is not inapplicable to many of our southern farmers, and their overseers, as some of them have felt to their cost. And possibly a sentiment somewhat analogous to the former, being deeply seated in the heart of the agriculturist, may have aggravated the tariff controversy.

Here follows the extract taken from near the close of the work:

"I can't introduce a very useful observation in a more proper place than this; and that is, *when the land you are to plough is the side of a very steep hill*, as it often is, 'tis down-right madness to proceed as most countrymen do, by ploughing directly up and down the steep. In this case, 'tis pity the driver is not in the place of his team; he would then, perhaps, discover that *'twould be the wisest way to plough across the hill*, by which means the cattle would not only draw with the same ease, as if they worked on plain ground, but the furrows, lying athwart, would prevent the rains from washing down the fatness of the soil, with every flood; a misfortune to which at present, all the lands are yearly liable, and often ruined and impoverished by it."

This passage certainly contains the idea in question, and pithily describes the barbarity (in more senses than one) of its neglect. Nor does it seem to be announced as any new discovery. But as this authority is in a measure unknown, I will add further, that it is not necessary to go abroad, or to obscure authors for testimony. A friend, to whom I had spoken of the above passage, informed me that he had heard the late Col. Taylor, of Caroline, in conversation on this subject, mention that horizontal ploughing had been practised in a particular district of Scotland, for more than a century. Since receiving your paper to-day, I have looked into "Arator," and find in the number on ploughing, a remark, (the which, if I had before known, I do not think I should have troubled you with my former queries.) It is this, "deep ploughing combined with enclosing, &c. vastly obstructs the formation of gullies in hilly lands even if fallowed with a level surface. But such lands will admit of narrow ridges as well as level, by a degree of skill and attention so easily attainable, that I observe it to have existed in Scotland above a century past, under a state of agriculture, otherwise execrable, and among the ignorant highlanders. It is effected by carrying the ridges horizontally in such inflections as the hilliness of the ground may require, curved or zigzag preserving their breadth." Farther on, he observes: "this classic system of agriculture has been *introduced* into Virginia, by a gentleman of Albemarle, in a style completely adapted to the state of the country," &c.

Here then is additional, and perhaps sufficient confirmation of my former impression, that the idea was not *new*, even if original with Gov. Randolph. It scarcely appears too that "the theory although eighteen hundred years old, had been passed by as unworthy of attention during the whole of that time, or that while adverted to (as we have seen) by writers, it failed to be reduced to practice."

In relation to the other topic, one of your remarks seems somewhat equivocal, you say that horizontal ploughing "was most probably practised by the Romans, and of course, a hillside plough of some sort was used by them." Rather a "non sequitur" I suppose, since thousands practise this mode in our country without using the hillside plough, properly so called, unless the common implements be dubbed with

this title while ploughing the steep, and anon, receives another when it reaches the plain. The principle on which this instrument is constructed, (and which I mentioned as having been suggested before,) is that of the double mold-board which is made to perform a semi revolution on the single axis to which they are both fixed, so as always to present one of them towards the base of the hill.

My authority for this is another English work, "Forbes' Agriculture," which though, with the one first above mentioned, left out of London's catalogue of English writers on this subject, appears to have been cited by one of the Agricultural journals of this state, (vide Virginia Farmer, vol. i. Nos. 17 and 18.)

In the American Farmer, vol. ii. p. 320, Mr. Sinclair, of your city, speaks of these instruments as having been *originally invented* by Gov. Randolph, and much improved by himself. By this, and other evidence, others, with myself, thought that nothing of the kind had ever been known before, not only in America, but, at least, in that country with which we have had most intercourse, and from whom we have derived most knowledge on this subject. Here follows, then, an extract from Forbes, p. 638. It is the description of a plough, of which, two figures are given, but as the other parts of it are unnecessary to the illustration, I shall present the second alone.

"This is a turn-wright, or turnrest, and by some called a turn-ridge plough. It turns the furrows all one way, laying the land level, without ridges, or parting furrows. And in sideling or sloping grounds, where the descent is too great for the cattle to draw the plough up and down the side of a hill, and too steep to turn the furrows up against it, this plough performs the tillage very well; the cattle *drawing it across the descent*, (qu. is not this horizontal ploughing,) it turns all the furrows downwards, or with the descent. It differs from the swing-plough in the mold-boards, which in this plough are *double and moveable*. The mold-boards *bc* and *de* are fastened together at their foresides, by joints or hinges as at *n*. When the furrow is to be turned to the right, the mold-boards stand in the manner represented in the figure. And when the plough returns, the mold-board *bc*, should be drawn up to the beam; and *de* then becomes the mold-board, being set out on the left side of the plough, by the wooden pins *cd* and *be*, which connect the two mold-boards, and pass through the sheet at *d* and at *e*. The pins should be drove tight into the holes in the mold-boards, but to slip easily through the sheet of the plough; so that either mold-board may be set out by the hand, or a small blow or two with the hammer. This is a very ready way of shifting the mold-boards; and the plough performs very well without wheels. The share has no fin, and is broad or chisel-pointed at *s*.

"To guard the joints and foremost ends of the mold-boards, a small bar of iron, *om*, may be fixed in the beam, thickest at the back next the sheet, and thinner towards the foreside. This bar will cut the earth, and open an easy passage for the mold-boards, and strengthen the plough."

You can judge whether there is any thing in this quotation that bears on the point before us. It may be said, indeed, that "that individual should be regarded as the true author of these improvements, who blessed our country with them, and we care not where he obtained the idea." This again appears somewhat inconclusive, or the lucky wight, who first changed or introduced the drill husbandry into the United States, might dispossess old Tull of what have heretofore been regarded his rightful honors. And although we may not care where the idea of a useful invention comes from, when we have the thing itself, may not a little curiosity about the matter be sometimes par-

* Tull, the father of English agriculture, was in early life a barrister.

[*We have thought it unadvisable to incur the expense of the engraving referred to. The object of the writer is certainly accomplished without the aid of the engraving.—Ed. Am. Far.]

done, although there be no apparent *utility* in the inquiry, or even if it savors of the antiquarian spirit?

The above extracts are given, not from a pedantic motive, but simply, because they fell in my way, and bore no internal evidence of their being original speculations, and the queries were submitted in hope of ascertaining whether any thing earlier had been known with respects to these subjects.

Grateful too as we should all feel to Gov. Randolph for what he actually *did*, why not discriminate the precise object and motive of it. It is very possible that he, although a scientific and classical man, may have hit on the idea in the course of his own reflections, or the hint may have been suggested in the course of his multilarious reading—afterwards forgotten—and subsequently risen to his mind's eye, unconnected with the name of the author from whom he received it, after having lain dormant for a long period in his memory. Or, perhaps, (and this is the most charitable supposition,) the necessity of doing something to remedy the appalling evils of the opposite system, may have forced his mind into the path which led to the happy thought. But an invention, made by two or three persons, unconnected with each other, and neither of whom has in any way communicated his ideas to the others, is not the exclusive property of any of them. Just as it is said that the method of fluxions was invented by Leibnitz and Sir Isaac Newton, almost simultaneously—and yet no one doubts the high powers of either—such cases being by no means rare in the history of art.

But to descend from these useless topics to something more practical.—I had intended to add something on the improvements which *have been* substituted for *exact* horizontal ploughing in this state—but really, you have dismissed my fourth query, in a style so very summary and cavalier, that you must have thought it either a quiz, or a ludicrous mistake. I assure, Mr. Editor, that it was neither the one or the other, although somewhat enigmatical from its haste. But my communication is already so extended, that I will not trespass further on your columns, than to add that the question is not as to the superiority of exact horizontal ploughing to the common; but whether, in some climates and soils, it has not been found so far to fail of its purpose as to produce great and lasting injury, which might be avoided by a slight change in the mode. If your readers are not wearied with the subject, it may be resumed at some future period by
A VIRGINIAN.

(From the Southern Agriculturist.)

ANSWERS TO QUERIES ON THE CULTURE OF RICE. MR. EDITOR:

Experience has convinced me that there can be no uniformity in the mode of cultivating rice, even on the same plantation, for a consecutive series of years; system there must be, but that must yield to the tyranny of circumstances and seasons. The principal thing is to understand the peculiarities of the soil, its advantages as to flowing and drainage, and the grasses which infest it most, and whether of a character to be managed by water or the hoe. This view of the case, and my wish to aid your valuable efforts, must plead an excuse for the indecisive and somewhat vague answers returned you by
COLUMELLA.

Query 1. What preparation is given the land prior to planting, is it broken up by the plough or hoe?

Answer. The best preparation of land prior to planting, depends upon the quality of the soil. If friable, light and rich, the hoe is the best implement for turning it; if of a clay texture and stubborn, the plough is preferable, and worked as deep as practicable, since the luxuriance of the growth depends much on the depth or tilth of the cultivation. On lands of the first description, chopping is the next process,

and is enough. On the latter chopping and harrowing are both advisable, though the latter is alone used at times for expedition. I would remark that in the cultivation of stiff clay land, the preparation for the reception of the seed is one of the most important points.

After the land has been digged or ploughed, if clay, it is very noxious to flow it, as it destroys the action of the frost, which would pulverize and improve it for planting. Lighter lands may be treated differently, and it is my opinion, that all lands are enriched even by the winter flowing, though the banks and ditches are apt to be injured.

2. When is planting commenced?

1. The time to commence planting depends much on the warmth or coldness of the soil, varying from the 20th of March to the 10th of April, but I think the safest is to begin about the 1st of April.

3. Are the seeds selected, and by what are they judged. Is there any preference to be given to seed obtained from the North or South, or from river or swamp-land—how often is the seed changed—how is seed-rice best obtained?

1. The best seed is that which is freest from red, and that grown on inland swamp is generally the best, both as to the above requisite, and in consequence of the grain being larger and more pearly. I have seen seed-rice with not a grain of red in a quart.

4. How near are the rows, and what quantity of seed is used per acre?

1. If the land is in fine order, I prefer the near trenches, i. e. fourteen inches and string planting, but in clay lands, which are always more or less lumpy, sixteen inches is the best distance; and the seed should be scattered in a trench about four inches wide at the bottom. In light alluvial land, a bushel and a half is the best quantity per acre. In clay lands, which of course, cannot tiller as much, two bushels per acre. The hoe trenching is preferable on account of neatness as to looks, and is also better than the plough trenching, inasmuch, as it is not so deep, and I prefer the light trench, from the impression, that rice tillers better the more it is planted on the surface, and also, because it has more loose soil below to sustain it, which is all important in stiff soils.

5. How are the seeds sown, in open trenches or on the string, do you cover or flow without?

1. In sowing, I never task the sowers, deeming it too important a part of the process for haste, I think, however, they do about one and three-quarters of an acre. With respect to the covering with water instead of dirt, termed "the open trench planting," it answers perfectly well on light lands, but cannot possibly be substituted for the old mode in clay soils; as the rice is never sufficiently covered with mud to ensure its safety, even after it has taken root and the water been drawn off.

6. Do you use the point-flow, and what are the advantages?

1. I have not used, but seen much of the point-flow. Where the land is grassy, (with the exceptions of joint and goose grasses,) the soil of a clay texture, and the land level, the point-flow for about two days is very advantageous; but the water must not be deep enough to spindle the rice, nor used after the hot weather in May sets in, as the water is apt to heat and scald the rice. It is a flow which requires great judgment, and therefore, cannot be recommended generally.

8. How often do you hoe before you put on the water? How long is the water kept on?

1. I endeavor to hoe twice before I put on the long-flow, as the rice, though apparently backened, in reality is acquiring vigorous roots, to derive the full benefit of the water, which unless to assist in mastering the grass, should not be kept on longer than ten days, as it makes the period between the long-flow and the joint flow too short. It frequently happens, however, where the rice is combating

grasses which the water can destroy, such as water-crab, and many others, which it can backen if it cannot destroy, or run them up so as to separate them from the rice; that the water should be put on before the rice has been hoed at all, as rice is more injured by the enemy of grass, than from any other cause.

9. Has the plough ever been used whilst the crop was growing?

1. Though very unusual, I have used a plough constructed for the purpose, to break up the alleys between the rice, when about ten inches high. It made a fine preparation for an immediately subsequent hoeing, but the trouble of clearing the lumps from the rice, and the new mode of near trenches, made me abandon it.

10. What is the after culture of the crop—what is the latest period in reference to the forwardness of the rice, at which the hoe might be used advantageously?

1. When the long-flow is drawn off, the rice should be kept as dry as possible, hoed, but not as deep as the second hoeing, picked clean and allowed to recover the dry growth, until the first joint appears, when the water should again be put on. I would on no account hoe rice as late as the period for it to joint, as it stands then in need of all the roots it has put forth. If grassy, it should be hand picked. I would, also, remark, that the water should be frequently changed, or purified with fresh water.

11. When ought the water to be turned off previous to cutting the rice?

1. The water should be drawn off preparatory to the harvest, about ten days, but planters, in general, from the apprehension of gales, keep it on longer.

12. How is the best period for cutting rice ascertained?

1. With respect to the time of cutting, I think it best when eight or ten grain, at the foot of the ear are unmaturing. They will harden after the rice is harvested, and much waste will be avoided.

(From the Southern Agriculturist.)

ON THE CULTURE OF RICE ON HIGH LAND, CORN AND PEAS.

Newbern, N. C. April 7, 1833.

Dear Sir,—Yours, of the 27th of Marc, has before me. I have made two small crops of rice as an experiment. The first crop was planted in drills three feet apart upon high, dry, sandy land that had been cultivated for a number of years in corn and cotton, and would have produced in corn, about ten bushels the acre. The rice was sowed in the drills at about the rate of a half bushel to the acre, during the middle of April, and covered lightly. It was afterwards cultivated with the plough and hoe in a similar manner as cotton. The season during its growth was favorable. When threshed and well fanned it yielded thirty bushels to the acre, and was disposed of in its rough state at forty cents a bushel. The second crop (this is my last one) was planted about the same time of the year as the first one, and about as thick in the drills upon low, wet land, just cleared. It did not grow so thrifty as the first crop upon high land, owing probably to the land being new and trashy. Some parts of it fired and came to naught. Upon the whole since it has been gathered and cleaned, I think it has yielded about equal to the first crop. Circumstances have prevented my measuring it. This crop I intend to clean, having erected a little machinery for the purpose. It is of the golden straw variety. I have, no doubt, but that this low land when properly reclaimed will yield sixty bushels to the acre. Low wet lands here called "savannahs," with clay foundations, have yielded this quantity. The crop requires about the same quantity of labor to make it as cotton. I have never planted it among corn, but have frequently seen it so planted. In a dry season upon high sandy land, I think it would fail. So prolific is it in breeding worms, that corn

planted in the soil immediately after a crop of it, is sure to be eaten by them while young. The rice made here is heavier by three pounds in the bushel than yours, owing to our more northern climate.

In cultivating corn upon sandy land, I commence by breaking the soil intended for it, in February, not deep. Sandy land should never be ploughed deeply. When broken it is crossed at intersections of six feet square, and on the first of April planted with three grains in each hill. Afterwards if there are any missing hills they are replanted. The field is ploughed over every fortnight, and hoed about the hills at least twice during its growth, and oftener if convenient. A hoeing at the time of thinning it, to two stalks in a hill, is indispensable, as is also a hoeing at the period of laying it by, to make a good crop. Four or five ploughings make the crop. My crop the past season averaged to the acre, three and one-eighth of a barrel of five bushels each.

In the centre of the squares of corn we plant, about the tenth of June, a hill of cow-peas, (ten or twelve peas.) If the land is freshly cleared, they yield a handsome return. If old, they yield but little. These we cultivate by simply keeping the grass from them. We do not hill them. We find them good food for both man and beast, and they ameliorate the soil by their shade. Sometimes they are sowed, and just before they blossom are ploughed into the soil to enrich it, with a very good effect. They are a valuable addition to the corn crop. Land much worn may be made to produce them again by manuring it. They do not look so well upon the table, owing to their color; but boiled until soft, with a piece of bacon, they are preferable to all the other species of the peas, except, perhaps, the garden peas while young. They are more productive than any other species, and have more gluten.

I have this spring carted and spread upon twenty-five acres of land, one thousand six hundred loads of manure, (three mules in a cart.) When not otherwise engaged, all my force is employed in bringing trash from the woods and throwing it into the horse stable and cowpens to make manure. By this means, in the course of the year, there is amassed a respectable supply to enrich the poorer spots of the farm, and it does enrich them wonderfully. By this process, these twenty-five acres have been brought from ten bushels to thirty, in two years, and my desire is to bring them to fifty.

Manuring is a partial remedy for emigration, the spirit of which is so prevalent here, that vast numbers leave us for Alabama, Tennessee, &c. where they expect to find richer soils. Probably they may, but when they come to count the cost of a breaking up and a removal, and in getting well settled again; many of them have gained but little, if any thing. Nor are they ever afterwards satisfied in having exiled themselves from their father land. And what is money to a dissatisfied spirit? And if a struggle against difficulty is a virtue, it is virtuous to enrich a poor soil, and probably in many cases, it is also the best economy. Of these matters every one assumes the right to judge and decide for himself. May they do so with advantage to themselves. In the interim, North Carolina is depopulating, and must, finally, be tenanted by her primitive occupants—beasts and Indians. Thus changes the world!

Respectfully, GEORGE WILSON.

NEW POTATO.

We were shown last Saturday a quantity of new potatoes just taken from the ground. They were planted late last fall and by the assistance of a deep coat of manure and good, warm soil, they vegetated during the winter and grew so large as to be fit for eating on the last day of March. It seems to us there might be some expedient contrived by which vegetables can be had earlier in the season, if not a considerable portion of the year round.—*Northampton Courier.*

(From the New England Farmer.)

CULTURE OF INDIAN CORN.

MR. FESSENDEN: Northampton, April, 1833.

Sir,—If you think the following account of some experiments relative to planting corn, worth a place in your Journal, it is at your service.

For some years, I have planted my corn thicker than has been thought a suitable distance, by farmers, generally, in this section of the country; and to me it has appeared decidedly to increase the crop. But as that was a matter of opinion, I made a little experiment; rather, however, to remove the doubts of others, than any of my own, on the subject.

I will premise by stating that the ground on which the first experiment was made, was a sandy loam, rather cold, and though naturally pretty good, was so run down by neglect and severe cropping, that in 1831, it gave probably less than half a ton to the acre, of poor sour hay, worth little else than to throw into the barn-yard for litter and manure. In May, 1832, it was ploughed, and about twenty cart-buck loads per acre, of a compost, (which was made, one load of manure, to two of meadow-mud or good soil, and piled up in layers the previous autumn,) were spread and harrowed in on the furrows.

The situation was one much subject to early frosts, and the crop probably suffered a diminution of about one-fourth, by that which occurred in September, and by which nearly all the leaves were killed, while the stalks pretty generally remained fresh and green.—The effect of this frost, was very similar to what I should have expected, from topping the stalks at that time. The corn was full in the milk, and the process of filling out, ceased entirely where the leaves were all killed; and where nothing more than the leaves were killed, the corn dried or shrivelled up without rotting.

I believe the farmers here, usually, give fifteen to eighteen feet, and I have seen some lots where twenty feet of ground were given to a hill.

In 1831, I gave twelve feet to a hill, and in 1832, it was my intention to give, generally, about ten feet, or to plant the hills a little more than three feet distant each way. The ground being prepared as above stated, and all treated alike, there seemed to be very little difficulty in making an experiment that might prove satisfactory, in determining whether I was giving the hills room enough or not. Accordingly about half a dozen rows were planted, at about four and a half feet from hill to hill, and as many more rows next adjoining were planted at about two and a half feet from hill to hill in the rows. The rows all being three feet apart.

All were alike until harvest, which was about the 10th of November, when for the sake of making as little trouble as was consistent with a fair result, I fixed on two of the rows, which were standing side by side, and which I shall call No. 1. and No. 2; as being sufficient for my purpose.

In No. 1 there were twenty two hills on one hundred feet in length, and the rows each side being three feet distant; it gave an average of 13.58 square feet of surface to a hill, or three thousand one hundred and ninety-seven hills per acre.

In No. 2 there were thirty seven hills on one hundred feet in length, and being the same width as No. 1, it gave an average of eight and one-ninth square feet of surface to a hill or five thousand three hundred and seventy-two hills per acre.

The corn was husked in the field, and carefully weighed, and seventy-five pounds of ears (the usual quantity) allowed to produce a bushel of shelled corn. No. 1 contained seventy-seven hills and gave fifty-one and three-quarter pounds of ears, equal to ten ounces and twelve grains per hill, or twenty-eight bushels and forty eight pounds per acre. No. 2 contained one hundred and thirty-two hills and gave seventy-five pounds ears, equal to nine ounces and a half grains per hill, or forty bushels and forty-four

pounds per acre. Making (in this case) eleven bushels and seventy-one pounds per acre in favor of the thick planting. It will be perceived that while the hills in No. 1 gained, individually, nearly twenty per cent. of those in No. 2; which by the way was very much calculated to mislead me as to the real result, if no other method than guessing has been adopted, they collectively, by the acre, made an entire loss of about thirty per cent.

The difference was greater than I had anticipated, and perhaps much greater than it would have been on a different soil. Therefore, I have given you some particulars relative to the soil, and management in this case, in the hope, that some of your readers, will make comparative experiments, in other kinds of soil, and give the result through the columns of the N. E. Farmer; that thus by making common stock of our experience, we may be able to take, at least, one important step, in the cultivation of this most valuable crop, independent of the old method of guessing at it.

I have given the data from which the estimates were made, so that if any inaccuracy has been admitted, it may be detected.

I also made a small experiment, to test the method proposed by some one (I believe in the N. E. Farmer) of planting the hills much thicker in the rows to prevent the corn sending up suckers, and at the same time giving the space between the rows a much greater width than is usual, for the purpose of freely admitting the rays of the sun. It was on a warm sandy soil, in somewhat better condition than the one above described. The corn suffered some from the drought but not so much from the frost as the preceding. The items were as follows:—No. 1 had thirty-six hills on one hundred feet in length, and the average distance of the rows on either side was three feet three inches, giving each hill 9.4144 square feet, or making four thousand eight hundred and twenty-five hills per acre.

No. 2 (between which and No. 1 there was an intermediate row) had fifty-three hills on one hundred feet in length, and the average distance of the adjoining rows, was four feet three inches, giving 8.2144 square feet to a hill, or five thousand four hundred and thirty-five hills per acre.

In row No. 1 there were ninety-seven hills, the produce of which was sixty-six and a quarter pounds ears, equal to forty-three bushels and seventy-three pounds per acre, allowing as before seventy five pounds for a bushel of shelled corn.

In No. 2 there were one hundred and forty six hills, yielding eighty-eight and a half pounds ears, equal to forty-three bushels sixty-nine pounds per acre.

In this instance it will be seen that the advantage (if there be an advantage) obtained by planting thick in the row, was somewhat more than lost by leaving so large a space between the rows.

On another part of this lot where the ground was rather better, but otherwise, all treated alike, (the manure having been spread on and harrowed in after ploughing,) I measured one row and found the hills occupying 8.19 square feet each, (rows three feet apart,) and yielding fifty-six bushels and thirty-seven pounds per acre.

These experiments would, on the whole, seem to favor the opinion that an equal distance each way is the best method of planting corn; and that on soil similar to what I have described, about nine square feet of surface is sufficient ground for one hill. On a different soil it might want double this quantity—and then again on another soil it might not require as much; comparative experiment is wanted to determine this. It is a subject in which ever New England Farmer is interested, and can be settled only by a careful comparison of the produce of ground planted at different distances; other things being equal.

We want facts.—Raising fifty bushels on an acre where the hills occupy twenty feet of ground each, although we call it a large crop, does not prove that

sixty bushels might not be raised on the same acre, if they occupied but ten feet each.

We want some facts, Mr. Editor, to guide us in raising corn; since the days of the pilgrim, the whole subject in New England has been managed *by guess*ing. Yours, truly,
WM. CLARK, JR.

(From the Maine Farmer.)

CULTURE OF PEAS.

MR. EDITOR:

One great and beneficial object of your useful paper, is to collect and spread abroad experiments, together with the profit and loss of farmers in their several pursuits; I beg leave therefore to make known the following: Mr. John Gilmore, of Monmouth, ploughed a piece of sward land, being one-half of an acre—a light loamy soil. In the spring of 1831, he sowed it with peas and oats, and obtained a good crop without manure. In autumn of 1831, he ploughed it again turning in what grass, &c. had grown on the land. In the spring of 1832 he opened furrows not deep, about 2 feet asunder, and in those furrows he sowed peas of the kind called, marrowfats. This was done as early as the frost had left the surface sufficiently deep to make his furrows; he covered the peas with a hoe. From this half acre having put on no manure, he raised peas enough in the pod to bring him \$17, besides what he used in his family, and he afterwards collected two and a half bushels of dry peas. He therefore realized a profit of \$20, at least from his half acre, without manure and without much labor. Might not some other farmers profit by this experiment by going and doing likewise. Peas are worth more by the bushel for fattening pork than Indian corn, and they are raised without hoeing. I suggest the idea, whether farmers had not better procure the most prolific kinds and raise more of them than they do. If there can be any objections I hope that some of your experienced correspondents will point them out and oblige a
FARMER.

(From the New England Farmer.)

INTRODUCTION OF POTATOES.

MR. FESSENDEN:

Fryburg, April 25, 1833.

I have been a subscriber for your very useful Journal, for about four years, and I highly prize it. Your items of intelligence contain more information of our government affairs, than a basket full of the political papers of the day. I soon get lost in the labyrinth of words, or tired of reading unmeaning sentences, therefore, I read none of them. I have gained much valuable information from the practical and highly scientific correspondence of those gentlemen, who enrich your columns, and also by your notes, on the ancient and modern agriculture of foreign nations, as well as our own.

You seem inclined to enlarge the number of your correspondents. I approach the list with very great diffidence, knowing myself inadequate to the privilege. But, as some very useful discoveries have arisen from small means, I take courage, and will tell you some things that I have noticed in the course of my life, being past the meridian.

Some time since I noticed the introduction of the potato, into one or two towns in the vicinity of Boston, and other information was solicited. Not seeing any from my native town, I will tell you my grandmother's story about their first coming into Wilmington, Massachusetts. I am the only grandson of Captain Samuel Walker, and the only child of Timothy Walker, Esq. of the above town that is living; my grandfather having died before I was born, I know nothing of him; but my honored grandmother lived to the great age of ninety-two years, when I was sixteen years of age, and retained her mental powers to the last unimpaired. About one hundred years, now gone by, she said, that grandfather was at Boston, and found an Irishman just landed from Ireland that want-

ed to work. They agreed, and the Irishman came to Wilmington, and began work, and at meal times he saw no potatoes cooked. He asked grandfather if he had no *potatoes*? He told him "no, he had heard of them, but never had seen any." Patrick said "if they would be letting him go back to the *vessel* he could get some, for they had some on their passage." Grandfather told him he might go, he should be very glad to get some; Patrick went to Boston, seventeen miles, and obtained two only. It being spring of the year he planted them and took good care of them, in the manner in which he was taught to cultivate them in Ireland, till they were grown, when he dug a few of them; and informed grandmother how to cook them; and the Irishman had a fine repast.—The family tasted but did not like them very well. When it was time to harvest them, he dug them, and grandmother had baked some large hard shelled pumpkins. They took one of the largest, and put up their whole winter's store of this now very valuable article. The shell contained a plenty for their winter's use, and to plant in the spring, and some to spare to their neighbors. Grandfather liked Patrick so well that he hired him a second time; he planted the potatoes a second time, when they raised so many they did not know how to dispose of them. My grandmother had not the convenience of the old lady at Lynn, they did not raise any gourds. Yours, respectfully,

JAMES WALKER.

(From the New England Farmer.)

CULTURE OF LUCERNE.

Columella estimated this plant as the choicest of all fodder because it lasted many years, and bore being cut down four, five or six times a year. It enriches, he says, the land on which it grows, fattens the cattle fed with it, and is often a remedy for sick cattle. Columella's observations were adapted to the climate of Italy, and lucerne is not so productive in colder countries. London says, though lucerne was so much esteemed by the ancients, and has been long cultivated to advantage in France and Switzerland, it has yet found no great reception in England. If any good reason can be given for this it is, that lucerne is a less hardy plant than red clover, requires three or four years before it comes to its full growth, and is for these and other reasons ill adapted to enter into general rotations.

The soil for lucerne must be dry, and inclining to sand with a subsoil not inferior to the surface; unless the subsoil be good and deep it is not fit for lucerne. The ploughing should be deep and thorough, and English writers advise to bury a coat of manure a foot below the surface. Such is the practice in Guernsey, where lucerne is highly estimated.

Capt. J. Swett, of Roxbury, has cultivated this grass to good advantage. In September, 1831, this gentleman sent a sample to the Mass. Hor. Soc. and observed, "This grass is of the fourth crop this season, and according to my estimate has produced at the rate of about 3000 lbs. per acre each crop when cut and dried. I have raised this grass the last three years and find that my horses and cows like it much. I prepare my land in the following manner: have it ploughed twice, harrowed well, and all the weeds and rubbish taken from the land, then sow about 30 lbs. of seeds to the acre."

The quantity of seed made use of in Europe is from 15 to 20 lbs. to an acre, though Mr. Swett thinks more would be better. The Hon. Robt. R. Livingstone has cultivated lucerne with much success. He advises, as the result of his experiments, 1. Never to sow on ground which is not perfectly pulverized. 2. Not to sow till the ground has acquired a degree of warmth friendly to vegetation, viz. in May. 3. To sow with no crop that will probably lodge. 4. If sown with buckwheat to apply no gypsum or other manure till the wheat is off. 5. If the quantity sown is small and the farmer can afford to lose a crop, to give the

ground one turn in autumn, another in April, harrowing fine, and a third the beginning of May, and then if the weather be mild and warm sow, if the ground be in perfect tilth; otherwise give it another ploughing.

When lucerne turns yellow it should be mowed, and the plants will come up free from disease.

(From the Southern Agriculturist.)

OBSERVATIONS ON THE CULTURE OF GRASSES.

MR. EDITOR:

No one knows better than myself, the impatience with which the planters of Georgia and South Carolina listen to recommendations to cultivate grasses. A large majority of them, by excessively overtasking their hands and horses in crops of corn and cotton, are obliged to run every thing almost off its legs, during the summer months, to keep down the crab and crow-foot grasses; these little spontaneous productions of the earth are regarded as the worst enemies to agricultural thrift, and one advising the use of any means to promote their growth, little better than a simpleton. Yet, with the exception of three or four of the southern states, there is no other country on the face of the earth, (so far as my information extends,) where grasses are not cultivated as an article of prime value to the husbandman. In most parts of Europe and the states of our Confederacy north and west of the Carolinas, lands which have any peculiar adaptation to the production of grass, bear a current price of double or treble that of arable, high and dry lands.

The planters of Georgia and Carolina are not more remarkable for these opinions and practices, in respect to the use of grasses, than are the fields they plough, for the wasted and hopeless condition of the soil, and the starved and shabby cattle that approach them in the intervals of crop growing. Have not these matters the relation to each other, of cause and effect? I cannot doubt it. Is there a probability, in any climate or country, of preserving the fertility of fields without an habitual and extensive use of the grasses? No instance is recollected; and the total disuse of this branch of husbandry sufficiently accounts for the conversion of parts of Maryland, of Virginia, the Carolinas and Georgia, from a state of great original fertility, to one of barrenness.

I know it has been said a thousand times, that our climate is too arid for grass, "that this is a bad grass country, &c.;" but we also know that in the South of Europe, in North Africa, and in parts of Asia, corresponding in latitude and with a higher mean temperature than ours, that grasses are objects of systematic care with husbandmen, and their fields are not, in the cant phrase of our country, "worn out." So far, indeed, are they from being worn out, that in many provinces of Italy, Spain and France, under the discouragement of the vilest governments that ever cursed the life of man, they have become more fertile.

It is often said, too, among southern planters, that grass must not be cultivated for hay, because the corn blades supply an abundance of better forage. If our dwarfish "skin and bone" cattle and horses, had a vote on that question, it would be decided otherwise.

Beside the incalculable advantages of having on hand at all times, a bountiful supply of good hay forage, and the consequent production of much manure, the roots and tops of the various grasses and other plants with which this country does or might abound, it is believed would sustain the fertility of our fields under a moderate course of cropping. The mass of vegetable matter that is found in the crab-grass roots, the growth of one season on an acre of land, would surprise most persons who have never seen them collected in heaps. Having once had occasion to plough and rake up the grass roots from a small plat of tolerably rich land, I found the quantity scarcely less than ten fold what had been expected. It was this

accidental development that explained, what had previously been a matter of some wonder; that our fields without any care of the soil, and under an unceasing course of exhausting crops for nearly forty years, should be found capable of producing any thing. I saw at once, that it was the roots of the crab-grass, this dire enemy of cotton and corn, this pest of the planter's life, which had enabled him, in spite of all his foolish improvidence, to keep himself and family alive.

I am apprized of no experiments in this state that would encourage a planter to import and cultivate foreign grasses; at any rate, before he had made a fair trial of those that are indigenous, and which are known to grow on moderately fertile fields by the use of one ploughing, followed by the harrow. Red clover, sainfoin, lucerne and orchard grass, have been sown, and managed indeed, very badly, without much good result, except in resting the fields where they had a brief existence of a year or two. Among the foreign grasses which I have tried on high and dry land, the orchard grass has succeeded far the best. It grows on worn land, stands our hardest winters so well as to furnish better pasturage for calves and milch cows than rye oats, and the roots are so abundant as to add a great deal of vegetable matter to the soil in which it is permitted to grow as long as three years. On account of its abundant roots, its flourishing in cold weather, and keeping possession of the ground for several years, it is preferable to crab-grass; though less valuable as a fertilizer than red clover with its long tap root. HIGHLANDER.

Lime, combined with phosphoric acid is the basis of the bones, and is found also in the fluids. Shells consist of carbonate of lime; and hence their remains have been considered as the basis of limestone mountains. Silica and manganese are found in the hair. Iron with phosphoric acid, constitutes part of the blood.

HORTICULTURE.

(From the New England Farmer.)

THE SPANISH CHESTNUT, (*Castanea vesca*.)

The Spanish chestnut is one of the most magnificent of the European trees, exceeding the oak in height, and equalling it in bulk and extent. It has long been naturalized to the southern countries of Europe. It is said that Tiberius Caesar first brought it from Sardis in Lydia to Italy, whence it was introduced into France, Spain, and Britain. It is indigenous, also, in many parts of Asia, in China, Cochinchina, Japan, &c. It grows in the greatest abundance, at present, in the mountainous parts of Italy, in the south of France and Spain, in Switzerland, and many parts of the Alps towards Italy, in Corsica and Sicily, where it grows half way up Mount Etna.

This tree seems to be very long lived, and grows to a very great size. The famous *Castagno de Cenio Cavallo*, on Mount Etna, as measured by M. Brydone, in 1770, is 204 feet in circumference; some, however, have doubted whether this is really one tree. Brydone says, it had the appearance of five distinct trees, but that he was assured the space was once filled with solid timber, and that there was no bark on the inside. Kircher, about a century before Brydone, affirms that an entire flock of sheep might be commodiously enclosed within it, as a fold. *Il Castagno del Galea*, of which there is no doubt, measured then seventy-six feet round, at two feet from the earth. But those trees grow on a deep, fertile soil, formed from the ashes of the volcano.

This tree deserves our care as much as any which are propagated in this country, either for use or beauty; being one of the best sorts of timber, and affording a goodly shade. The leaves continue late in the autumn, turning then to a golden hue; nor are they so

liable to the depredations of insects. The fruit is a desirable nut for autumn or winter, and is eaten roasted, with salt, and sometimes raw. It is the usual, and in some places almost the only food of the common people in the Apennines of Italy, in Savoy, and some parts of France and Spain. They are not only boiled and roasted, but puddings, cakes and bread are made of them. "Chestnuts, stewed with cream," according to Phillips, "make a much admired dish, and many families prefer them to all other stuffings for turkeys. It is considered to be a flatulent diet, and hard of digestion; yet there are instances in Italy where men have lived to the age of 100 years, who have fed wholly on chestnuts. These nuts are used for bleaching linen, and for making starch; they are also reputed excellent food for deer, sheep, and other domestic animals. The wood is used by the cabinet maker and cooper; makes an excellent cup-cupice tree, for poles and hoops; the bark is equal in astringency to that of the larch and mountain-ash for tanning; the wood is also esteemed for timber and fuel.

Propagation and Culture.—This tree is propagated by planting the nuts early in spring in beds of unmanured sandy loam with a dry bottom, but will grow in any soil, on a dry sub-soil. Before planting, it will be proper to put the nuts into water to try their goodness, which is known by their weight; those which swim are generally good for nothing; but such as sink to the bottom are sure to be good. In planting, a drill should be made about four inches deep, in which the nuts should be placed at about four or six inches apart, with the eye uppermost; then draw the earth over them with a rake, or some other suitable instrument; then make a second drill at about the distance of a foot from the former, proceeding as before, allowing three or four rows in a bed, with an alley between, three feet wide, for the convenience of cleansing the beds, &c. In about three months the nuts will appear above ground, after which, they should be kept clear of weeds, especially when young. In these beds they may remain for two years, when they may be removed into a nursery at a wider distance. The best season for transplanting is late in autumn, or early in spring. The time generally allowed them in this nursery is three or four years, according to their growth; but the younger they are transplanted, if designed for timber, the better they will succeed. They should be kept clear of weeds, observing to prune off lateral branches, which would retard their upright growth; and when they are disposed to grow crooked, they may be cut down to the lowermost eye, next to the surface of the ground, the first year after planting, which will cause them to make one strong upright shoot, and afterwards may be trained into straight, good trees. After having remained three or four years in this nursery, they may be transplanted, either in rows to grow for timber, or in quarters to grow for wilderness plantations, avenues, clumps, or the orchard. If they are intended for timber, it is much better to transplant them and let them remain unmoved; for these trees are apt to have a downright tap-root, which, being bent by transplanting, is often a check to their upright growth. But when they are intended for fruit, permit the trees to branch out freely above, mostly in their natural order, to advance in large regular heads. Give occasional pruning only to very irregular and cross branches, and low stragglers. After they have attained some tolerably branchy growth, they will come into bearing in moderate plenty; and when they have expanded into large, full heads, they may be expected to yield in abundance.*

The foregoing remarks will, I hope, have some tendency to encourage the growth of this invaluable tree in this country. There can be no doubt of its succeeding to perfection in the middle and western

* See Loudon's Encyclopedia of Gardening, and Miller's Gardeners and Botanists' Dictionary, by Martin.

states; and a high probability in the northern. Every patriot and friend to posterity can do no less than make the experiment. Let us hope, however, to see it rear its head among our forests and plantations, and, ere many years, be a source of health, ornament, and of profit. B.

NOTE. A quantity of the nuts have recently been imported by I. Thorndike, Esq., of Boston, for gratuitous distribution to those who wish to make the experiment of cultivating them. Small parcels may be had gratis at the office of the New England Farmer.

(From the Genesee Farmer.)

GRAFTING.

*Volusia, Chatahque county,)
March 1, 1853.)*

MESSRS. EDITORS:

Will some person, through the columns of the Genesee Farmer, answer the following questions? Is it possible to make a red and green apple scion grow together so as to produce fruit, one-half of which shall be red, the other half green? that one-half may be sweet, the other half sour? If so, how is it performed? Is it by grafting, or by inoculation? What season should grafts be set? and what time in the summer should inoculation be performed?

REMARKS BY A CORRESPONDENT.—In reply to the above, we answer, that there is no doubt but that two scions may be split longitudinally, and nicely fitted together, and thus be ingrafted to a common stock; but whether the fruit would partake of both parents, is quite apocryphal. It seems to us, as the scion grew and lengthened itself, it would still preserve its identity, as undoubtedly would each bud which should sprout from the original scion; if a blossom bud should start from the wood at the very line of union, we are not prepared to say what would be the result. We have never seen an apple of the two colors so distinctly marked as to indicate an operation of this kind, but there are many instances of apples half sweet and half sour; and we were last fall shown a limb with the apples attached, alternately sweet and sour, which was characteristic of the whole tree. It has been often asserted, that the half sour and half sweet apples were produced by the splitting of the graft, or the bud, in inoculation; while others have asserted that it was a premature ripening of one side of the fruit.

The peach and the plum will graft and bud together; what would be the consequences if this union should take place? ripening at different periods, a rough skin and a smooth one, stones of a different size and form—it would certainly be an anomaly in nature.

The best season for budding is at any time after the formation of the new bud, when the bark will peel freely on the stock. If put in too early, they are apt to start late in the season, and not ripen their wood.—July and August are the best months. Grafting is preferable to budding in all cases except on small and young stocks, or with the peach, nectarine and apricot.

(From the Northern Farmer.)

HIGH BUSH CRANBERRY.

MESSRS. NEWTONS: *Newport, May 1850.*

In the New England Farmer of the seventeenth of April last, a correspondent inquires of the readers of that paper whether any of them "know of the high bushed cranberry; where any of it grows, and if so, whether it can be obtained in any considerable quantity?" Not having seen any answer to that inquiry in the New England Farmer, I have thought proper to communicate through your valuable paper, some particulars in relation to that shrub, which is said by the correspondent of the New England Farmer to be "an extensively valuable medical plant—although its virtues are very little known."

The high bush cranberry is a beautiful shrub, grows from ten to fifteen feet high, and is exceedingly fruit-

ful; producing great numbers of large clusters of berries, resembling the low cranberry in appearance and taste, though I think of a pleasanter acid. The berries are not quite as large as those of the low species, and have a hard stone or seed in them of considerable size, like that of the cherry, though of different form, being thin and flat, instead of globular. This beautiful shrub is indigenous in New Hampshire; is common in the western part of the state, and is occasionally found in the gardens, and about the dwellings of our citizens. Its favorite location is on the interval lands near brooks and rivers, where it grows luxuriantly; but is, I believe, never found on low meadows, or wet and swampy lands. Z.

[The shrub above spoken of is the *Viburnum oxycoccos*, and belongs to an order very different from the cranberry. It is a tolerable ornament in a shrubbery, but of very little, if any use in the kitchen.—*Ed. Amer. Farmer.*]

RURAL ECONOMY.

(From the New England Farmer.)

ANALYSIS OF DIFFERENT SORTS OF SALT, &c.

Jamaica Plain,)
April 29, 1833. }

T. G. FESSENDEN, ESQ.

Sir,—In your N. E. Farmer of 7th March, 1832, you published an article furnished by me, on the subject of salt, (in consequence of an article from the N. York Medical Repository by Dr. Mitchell on the *destructive qualities of Liverpool Salt*), in which paper I gave you an extract from Ure's Chemistry, 4th edition, 1822, an analysis of eleven sorts of salt. And my expectations of being enabled to furnish you an analysis, by an able chemist of our own country, of several foreign as well as American salts.

I procured eight samples, as per particulars below, and President Quincy was so obliging as to request Dr. Webster, Professor of Chemistry of Harvard University to analyse them. He has sent me the result which I now give you of 500 grains of each.

	Muriate of Soda.	Sulphate of Magnesia.	Sulphate of Lime.	Aluminous matter.	Muriate of Magnesia.	Muriate of Lime.	Insoluble earthy matter.
1. Sicily coarse salt,	478	4½	2½	4½	2½	1½	6½
3. Eastport, Me.	491		3½		2½	1	2
4. New York, fine,	183	5½	5½		4	2	
7. St. Ubes, coarse,	179½	2	10		2	1½	4½
9. Quincy, Mass.	484½	3	5			4½	2
8. Native rock or mineral salt from Cheshire, Eng. }	491½		3½				5

No. 2. Liverpool coarse fine. The Muriate of Soda and other constituents agreed so nearly with the results from No. 8, as did the results from No. 6, (Liverpool finest,) that I find them noted on my book as the same, differing only in the state of mechanical division.

No. 5. Turks Island salt, very nearly the same results as No. 1. In the sample from Sicily, No. 1, I obtained indication of a minute proportion of iodine.

I. W. W.

No. 3 was a specimen of salt manufactured at Eastport, in Maine, (from the English Cheshire Rock or Mineral salt.) Large quantities of it are there manufactured, and it appears to possess precisely the qualities of Liverpool salt *all of which* I believe is manufactured from the Mineral rock and springs of Cheshire.

No 4 was from a basket of fine table salt manufactured at one of the salt establishments in the western part of New York.

No 9 was a specimen of salt from President Quincy's own salt works at Quincy, Mass., evaporat-

ed from sea water. His works have long been considered as producing it of superior quality.

After the examination, of the different salts usually for sale in our markets, I trust there need be no longer any fear in using them, on account of any bad properties they may have been supposed to possess. Only bearing in mind that their use should be by *weight*, not *measure*. If for butter I have no doubt the fine Liverpool or Eastport is as good as any other, provided the butter be well made and thoroughly worked.

I have for many years had no other used, till the past year I purchased the best Turks Island I could find, and had it well washed and ground fine. We do not perceive the least difference in the butter, having used precisely the *same weight*.

There is no doubt for packing *meat and fish* the *coarsest* salt should be used, as keeping the meat separate, and being longer in dissolving.

Yours, truly,

JOHN PRINCE.

(From the New England Farmer.)

SOWS AND THEIR PIGS.—ANIMAL FOOD FOR SWINE, &c.

MR. FESSENDEN: New Bedford, May 1, 1833.

In your paper of April 3, I observed an article by "A Subscriber," the writer of which recommends animal food to be given to sows just before farrowing, believing it will prevent them from destroying their pigs. He recommends fresh meat; I will go further and say, that my experience tells me that salt meat, either raw or boiled, will produce the same beneficial effect.

I have since seen another article in your paper over the signature of "Berkshire," the writer of which does not agree with your "Subscriber," does not "come to the same conclusions," but takes other ground—recommends another mode of treatment, a mode that is *not indispensably necessary*, as I shall prove by and by.

He says, "The nature of swine is to feed on almost any thing that comes in its way, but its natural food is vegetable rather than animal," &c. It may be so, but who is there that does not know that swine are extremely eager after animal food at *all* times, that they will *always* leave vegetable for animal food—and who can say, but that at or near the time of farrowing some of them may have still stronger inclinations for animal food? Perhaps some sows would not destroy their pigs under any circumstances as to food or location, while others from some cause unknown to us, are induced to commit an unnatural act.—"Berkshire" says, "In cases where the pigs come late in the season and the sows have had the opportunity of coming to the ground and working in it, and collecting grass, roots, &c. I have never known any of the difficulties complained of by your correspondents."—He then recommends, that when from necessity sows are kept in a close pen and from the ground, giving them a *suitable supply of potatoes, turnips, ruta бага, &c.* which he thinks will remove the difficulty complained of.

I will now inform Mr. "Berkshire" of a little of my experience, and leave him to make his own comments—I have seen more than twenty broods of as fine pigs as ever were seen in a farm yard, farrowed in a house the dimensions of which did not exceed eight feet by three and a half or four, and raised on the deck of a *whale ship at sea*, where there was no earth for the sows to work upon—no grass—no roots to be collected, and what was still worse, there were no *potatoes*—no *turnips*, nor *ruta бага*, not even for human, much less to furnish a "suitable supply" to feed swine upon.—Yes, I have raised pigs that have lived to farrow pigs, that never sat a hoof on terra firma, that never had the pleasure of sticking their noses in the earth for the purpose of *collecting grass, roots, &c.* and I do not recollect of ever having a pig destroyed.—I don't wish to be understood that I *always* give my sows animal food—it was not the case; but I have frequently done, and believe in its salutary effects.

Now, Mr. Fessenden, if you are not surfeited with the subject, but intend "going the whole hog," please insert in your next paper, for the information of Berkshire and others concerned, the opinion—the experience—and the plain unvarnished tale of a New Bedford

WHALER.

(From the Cabinet Cyclopædia.)

HINTS TO HOUSEWIVES.

Vessels intended to contain liquid of a higher temperature than the surrounding medium, and to keep that liquid as long as possible at the highest temperature, should be constructed of materials which are the worst radiators of heat. Thus, tea-urns and tea-pots are best adapted for their purpose when constructed of polished metal, and worst when constructed of black porcelain. A black porcelain tea-pot is the worst conceivable material for that vessel, for both its material and color are good radiators of heat, and the liquid contained in it cools with the greatest possible rapidity. On the other hand, a bright metal tea-pot is best adapted for the purpose, because it is the worst radiator of heat, and therefore cools as slowly as possible. A polished silver or brass tea urn is better adapted to retain the heat of the water than one of a dull brown color, such as is most commonly used. A tin kettle retains the heat of water boiled in it more effectually, if it be kept clean and polished, than if it be allowed to collect the smoke and soot, to which it is exposed from the action of the fire. When coated with this, its surface becomes rough and black, and is a powerful radiator of heat. A set of polished fire-irons may remain for a long time in front of a hot fire, without receiving from it any increase of temperature beyond that of the chamber, because the heat radiated by the fire is all reflected by the polished surface of the irons, and none of it is absorbed; but if a set of rough, unpolished irons, were similarly placed, they would become speedily so hot, that they could not be used without inconvenience. The polish of fire-irons is, therefore, not merely a matter of ornament, but of use and convenience. The rough, unpolished poker, sometimes used in a kitchen, becomes speedily so hot that it cannot be held without pain.—A close stove, intended to warm an apartment, should not have a polished surface, for in that case it is one of the worst radiators of heat, and nothing could be contrived less fit for the purpose to which it is applied. On the other hand, a rough, unpolished surface of cast iron, is favorable to radiation, and a fire in such a stove will always produce a most powerful effect.

CHURNING ON HORSEBACK.

We have just been told, by a gentleman who has travelled in South America, that the Indians near Buenos Ayres *churn their milk on horseback*. They have plenty of horses, and they are taught very early to ride with skill; so that when they wish to churn they put their milk in a tin canister or any other convenient vessel, and taking it on horseback, gallop off several miles, till by the sound it makes in the churn, they know that the butter has separated from the buttermilk. Even little boys perform this service, for so well do they train their horses, that if the rider wishes to have his beast turn towards the right, he holds out his left hand, and presses the bridle rein gently against his neck; and if to the left, he holds out his right hand, and presses the right rein; the horse always turning in an opposite direction, as if to get away from his hand.

Our informant says, that on seeing a little Indian boy come galloping along one day with his churn, he asked him to stop, and inquired how far he had rode. He said about two leagues, (six miles.) On being asked how much farther he should go; he said about one more league. On opening the churn, the butter was already beginning to separate. Probably another league was sufficient to complete the process.

Prices Current in New York, May 18.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, 12 a 14; Upland, 11 a 13; Alabama, 11 a 14. *Cotton Baggins*, Hemp, yd., 13 a 24; Flax, 13 a 14. *Flax*, American, 7 a 8. *Flaxseed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a 5.62; Canal, 5.56 a 5.57; Balt. How'd St. 5.87 a 6.00; Rh'd city mills, — a —; country, 5.75 a 5.87; Alexand'a, 5.75 a 5.87; Frederickburg, 5.62 a 5.75; Petersburg, 5.62 a 5.75; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a —. *Grain*, Wheat, North, — a —; Vir. — a —; Rye, North, .76 a .78; Corn, Yel. North, .73 a .75; Barley, .68 a .70; Oats, South and North, .43 a .45; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; *Provisions*, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, 7, 1 a 19.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1892, by two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13½ and the other 13½ hands high, and will yet grow three or four inches; their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to I. I. Hitchcock, American Farmer establishment, Baltimore. The price is \$600 each.

PUBLIC SALE OF DURHAM SHORTHORN-ED CATTLE AND HIGHLY IMPROVED SHEEP.

Will be sold on Wednesday, 29th day of May next, on the *Lucky Hit Farm*, Frederick county, Virginia, the late residence of Richard K. Meade, dec'd, the highly improved stock of CATTLE and SHEEP, belonging to the estate of said dec'd. It is believed that the stock now offered for sale, stand unsurpassed, in the valuable qualities of their kind, by any in our country. Amongst the Durham Cattle are several BULLS, from a few months up to three years old, handsomely marked and of fine figure and size; there are also a number of young COWS, some of them with calves by their sides; and a handsome collection of HEDGERS less than a year old, and well grown.

The SHEEP are equally remarkable for the quantity and quality of their wool, and for their uncommon thriftiness. They are the result of the unremitting care and attention to the subject, by the deceased, for the last twenty-five years. The flock consists of about one hundred and fifty, males and females, and nearly an equal portion of each. The Ewes have at this time young Lambs by the most approved Rams on the place. They will be sold in small divisions, with a view to the general accommodation.

A credit of nine months will be given, the purchaser giving bond and approved security, but a discount will be allowed to any that may prefer paying the money in hand.

DAVID MEADE, Administrator.

April 5,—St

WHITE MULBERRY SEED, &c.

Just received at the American Farmer Office and Seed Store a supply of fresh and genuine White MULBERRY SEED. Also

MAMMOTH PUMPKIN SEED.

EARLIEST FRENCH CABBAGE do.

EARLY FRENCH, or PARIS WHITE ONION do.

ACORN SQUASH do.

Together with a complete assortment of Fresh Garden Seeds, including those raised by the United Society of Shakers at New Lebanon, N. Y.

I. I. HITCHCOCK.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at 75 cents per bushel.

I. I. HITCHCOCK,

American Farmer Office and Seed Store.

TO WINE DRESSERS.

The Subscriber wishing, to engage a Wine Dresser to take charge of a flourishing and fruitful Vineyard, offers the most favorable terms to a person who can furnish testimonials of a good character.

For particulars apply to I. I. HITCHCOCK, American Farmer Establishment, or to the undersigned by letter, addressed to Brown's Mills, Mifflin Co. Penn.

May 24. t f.

JOSEPH HENDERSON.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States." By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Scythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

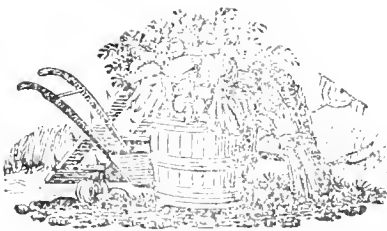
Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.



HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Scythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 do. Hay and Manure FORKS.

30 do. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, hung ready for use.

SICKLES, English and American Scythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them.

May 24.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—An advance will be noticed in flour. The wagon price of Howard street remains at \$5.25; some few purchases have been made, however, at \$5.31, and one or two at \$5.37½. Wheat fluctuates, and varies considerably, according to quantity in market, and quality of parcels; showing that a tolerable supply would soon reduce the price.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 1.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 8.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 659 bbls. Md.; and 124 bbls. Ohio—total 783 bbls.

From—best white wheat family \$6.75 a 7.25; super Howard-street, 5.50 a 5.62½; city mills, 5.75 a —; city mills extra 6.00 a —.—CORN MEAL bbl 3.62½; GRAY, bested wheat, 1.20 a 1.25; white do 1.30 a 1.33; —CORN, white, 62 a 63; yellow, 63 a 64; —Rye, 70 a 72 —OATS 37½ a 41 —BEANS, 75 a 80 —PEAS, 65 a 70 —PROVISED SEED 8.00 a —TIMOTHY, — a —ORANGE GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50—Herd's — a —Lucerne — a 37½ lb.—BARLEY, FLAXSEED 1.50 a 1.62—Cotton Va. 11 a 13—Lou. 12 a 14—Alab. 11½ a 13—Tenn. 11 a 12; N. Car. 11½ a 12½; Upland 12 a 13½—Winekey, hhd. 1st p. 29½ 29½; in bbls. 31 a 32—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18 Hairy, Russia, ton, \$190 a 205. Country, dew-rotted, 6 a 7c lb. water-rotted 7 a 8c.—Feathers, 37 a 37½; Plaster Paris, per ton, 4 12½ a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 25.00 a 25.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 2.50 a 2.75; Hickory, 4.00 a 4.50; Pine, 2.00.

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Special Agents for the American Farmer.

The following persons are authorized to act as Agents for the American Farmer in the several places of residence:

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General Agent for the State of Maryland, T. B. Brennan.	

➤ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. I. Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, MAY 31, 1833.

"LADIES' HORTICULTURAL MAGAZINE AND FLOREL R. GISTER."—The prospectus of a monthly journal, with the above title, to be published in Baltimore, by H. F. Dickehut, Esq. has been put into our hands. The first number is to appear in September next, if a sufficient number of subscribers is obtained, and the price is five dollars per annum, payable on delivery of the first number. The work is intended to embrace all subjects connected with *ornamental horticulture*, and is therefore appropriately dedicated to the ladies, for whose use and amusement Mr. Dickehut is certainly well qualified to render it valuable.

FRUIT TREES, CATERPILLARS, &c.—A very intelligent young friend of ours, who had seen a remark in a late Farmer, on the existence of caterpillars to an unusual extent this season, informs us that his orchards have escaped the ravages of these insects this season entirely; and he believes the cause of this exemption to be fairly attributed to his practice of scraping the bodies of his trees in the winter. He says he scrapes all the dry scaly bark off, with the scraper used in scraping vessels, at any time after the commencement of winter, and before the rising of the sap in spring. He thinks that these and other insects deposit their eggs beneath the dry scales of the bark, and that the larvæ emerge thence in the spring; but by thoroughly scraping the bodies of the trees he effectually destroys them. At all events his orchards are perfectly free from these and all other insects, while his neighbors' are infested by them as usual, and he resorts to no other means of protection. He says that one of his young orchards had produced very inferior knotty fruit, and it had been concluded that, though the trees were selected from one of the most respectable nurseries in the country, the varieties were bad. However, he determined to scrape the trees, as above, and the fruit the next season was fair, and of the quality originally expected from them.—These facts are from a source so respectable that we do not hesitate to lay them before our readers in the fullest confidence in the correctness of the inferences drawn from them. We have often seen the eggs and larvæ of insects concealed beneath the dry scales of bark on fruit trees; and it seems nothing but the simplest operation of common sense to infer, that the removal of them in winter would save the trees from the ravages of at least those insects that would have emerged from these cells at the commencement of warm weather. Every body knows that the destruction of one insect in spring, is equal to the extermination of some thousands in midsummer; and, therefore, we conclude, that an orchard may be protected from the caterpillar by the means practised by our informant.

THE GREAT GRAPEVINE.—Our friend Willis, of Oxford, Eastern Shore of Maryland, has furnished us with the following certificate of the number of bunches of grapes now on his great grapevine. It will be recollected that we have several times published the number borne by this vine heretofore: in 1831 we believe it was twenty-five thousand bunches, or upwards. The number this year exceeds any thing we ever before heard of, and we doubt whether a parallel can be found for it. Mr. Willis will please give us a history of this vine, with the name of the kind of grape.

Oxford, May 6, 1833.

We hereby certify, that we have counted the bunches of grapes, this day, that are on John Willis' grapevine, in his yard, of seven years' growth, as accurately as we could, and have made allowance for good count.—We find on it fifty-four thousand four hundred

and ninety bunches, besides many more young bunches appear to be coming out, and we are fully of opinion we have, by the rule we went by, allowed at least three thousand for good count, that are already in sight. No young growth that had not more than two bunches on it was counted; and we think at least one third or more are double bunches, and are only counted as single.

CHARLES M. BROWNELL.

RICHARD MARKLAND.

AFRICAN BEANS—GAME BIRD.

Extract of a letter from Com. Porter to J. S. Skinner, Esq. dated

Pera, Constantinople, March 5, 1833.

I shall send you a few beans from Africa. They were given to me by His Excellency the Baron d'Ottenfels, the Austrian minister at this place. The following is what he says of them: "Haricots du Kordosan en Afrique," from the seed of 1832. To be sown in April or May, either in dry or wet ground indifferently, sheltered from the north wind. The thick stem furnishes an excellent charcoal for gunpowder. The beans are good for fowls and beasts, (bestiaux.) The plant cut up and mixed with manure gives to it great activity in enriching the earth.

We have a game bird here much resembling the swan in shape, and as large as a turkey. I will try and send you a drawing; in plumage they are like those fronting page 589 of the 3d volume of the Turf Register you sent me. I send you now one of the side leathers near the thigh, which may convey some idea of the size and beauty of the bird. It has but three toes, all standing forward, no hind claw or spur. They are called *Taroughau* by the Turks, which is the name for a turkey.

Yours, truly, DAVID PORTER.

SIREW SALT OVER YOUR ASPARAGUS BEDS.—The asparagus is a native of the shores of the ocean, and will bear so much salt without being injured, that most of the weeds that infest the beds may be destroyed in this manner. But the application has other advantages: salt is a valuable manure; and it also repels insects by its pungency; for though we know of none that feeds on the asparagus, there are many that would otherwise *pouch*, and lessen the fertility of the soil.—*Genesee Farmer*.

(From the Richmond Compiler.)

NEW OIL MILL.

We have called the attention of our readers several times to the very useful art discovered by Messrs. Smith & Follet of Petersburg, of hulling the cotton seed and extracting oil from the kernel. We observe by the "Natchez Journal," of the 3d inst. that it is about to be applied on a very large scale in the west, where cotton is raised, and the seed may be obtained in the greatest quantity. We had heard of this establishment being about to be made in the west, under a patent right purchased by Messrs. A. Plummer & Co. of Messrs. Smith & Follet. The Journal informs us, that the company have erected at Natchez a substantial building, eighty-four feet by eighty, and one and a half stories, which comprises a steam engine of twenty two and a half inch cylinder, and five feet stroke, driving eight hulling machines, five set of stones, and a machine to prepare and grind the kernel for heating—eight cylinders for heating the meal; a corn and seven lever presses in proportion.

It is the largest establishment for making of oil in the United States—and capable making from one to two thousand gallons per day. There are but two other cotton seed oil factories in the union—one in Petersburg, and the other in North Carolina, "scarcely more than a tenth as large" as that which Mr. Plummer has established in the city of Natchez.

It is ascertained that *one bushel of seed will make three quarts of oil*. It is said to be "among the best of paint oils—it is easily refined—it answers as well as the very best winter strained sperm oil for lamps, without the least disagreeable smell, answering admirably well for woollens, machinery, &c." Exclusive of the oil, the cake is the very best of food for cattle, &c. The planters have given every facility in their power for supplying seed chiefly to the mill—and have promised to save the seed of their present crop, and on the best terms, for the new establishment.

Mr. Plummer has made arrangements for making a similar establishment in Florence—and also one in Mobile, state of Alabama.

We cannot entertain a doubt, that this manufacture will be eminently profitable to the proprietor and useful to the public. We were favored during the last autumn with specimens of the oil from the Petersburg factory. The one was the first extract from the seed—of a yellowish hue, and very transparent. The other was the refined oil, which was as limpid and clear and light colored as water itself. It seemed admirably calculated for painting, lamps, &c.

THE HORTICULTURAL SOCIETY OF MARYLAND.

For the diffusion of Horticultural Science and the Improvement of the Art of Gardening; Associated Nov. 20th—Incorporated by act of the Legislature, at December session, 1832.

The Council of this Association have resolved to open the public proceedings of the Society, by an Exhibition of Plants, Flowers, Fruits and other Vegetable productions.

The Exhibition will be opened on the eleventh day of June next, and will continue during that and the following day.

On the eleventh of June, popular lectures will be given in the hall of exhibition, and on the twelfth the society will hold a public meeting, when an address will be delivered.

In furtherance of the views of the society, the Council have resolved to offer premiums to the aggregate amount of one hundred dollars, to be awarded to the finest objects exhibited, by a committee of Judges appointed for that purpose.

The following gentlemen have been appointed to act as committee of arrangement, viz: H. F. Dickehut, chairman, Z. W. Bates, Geo. Fitzhugh, James Moore, Edward Kirtz, I. I. Hitchcock, Sam. Feast, John Feast.

All who feel interested in the advancement of Horticulture, are invited to lend their aid in furtherance of this design. Those wishing to exhibit plants or other objects of Horticultural interest, will please communicate their views to the committee of arrangement, stating at the same time the articles they design to exhibit.

Letters on the subject, must be addressed to the chairman of the committee, from whom any further information may be obtained.

May 3.

FOREIGN MARKETS.

HAVRE, April 13, for the week.

Cotton—We have received 9751 bales: the sales are 5299 bales. The demand was calm the first day, but was more extensive at the close; 2161 bales Louisiana at 98f. a 122f. 50; 1174 Georgia, at 96f. 50 a 104f. Some ordinary lots sold at 90 a 95f. Such as a year ago obtained 70 a 75f. Stock 28,000 bales.

Rice remains in small demand; 60 tierces Carolina sold at 22f. 25 for fair, to 24f. a 24f. 25 for good.

April 16—Sales of Cotton.—Louisiana 82 bales, at 108f. 102f.; do. 23 do. 102f.; do. 51 do 97f.; do. 46 do. 76f. 50c. Upland, 102 bales, 102f.; do. 280 do. 100f.; do. 75 do 100f.; do. 523 do. 99f. 50c.; do. 76 do. 98f.; do. 75 do. 98f.; do. 100 do. 97f. 50c.; do. 112 do. 97f.; do. 60 do. 96f.

AGRICULTURE.

ON AGRICULTURAL SCHOOLS.

[The following article, by the late Richard K. Meade, Esq. of White Post, Va. will be read with increased interest, now that excellent man has passed from amongst us. He sent it to us a day or two before his death, and it was accidentally mislaid.]

[Ed. Am. Far.]

(From the Virginia Farmer.)

Lucky Hit Farm, near White Post, Frederick Co. Va. }
 Mr. THEODORICK M'ROBERT: Jan. 7, 1833. }

Dear Sir,—It gives me much pleasure to acknowledge the receipt of yours, of December, and the accompanying numbers of the Virginia Farmer. I have long been zealously of the opinion, that such a paper, well edited, will greatly improve the indifferent state of our agriculture, and in contributing to uphold and sustain a cause so generally interesting, it will of course, reward the devotion of any individual whose talents, taste and interest, will combine with ordinary selfish views a high sense of the obligations imposed on all those who have the honor of laboring in the agricultural cause, esteeming it in a liberal, enlightened and expanded sense, the cause of virtue and improving humanity, and not merely the cultivation of the earth, increase of its fertility, or multiplication of its productions. The price of a subscription is a judicious and happy one for the accommodation of almost all farmers who have not imbibed prejudices against learning from the experience of others, or who cannot read their mother tongue. I should not be surprised, now that the ice is broken, that we should have in Virginia, several in no great lapse of time, especially, in the way the American Farmer has suggested, in terms so noble and disinterested, that political papers should devote a portion of their columns to the cause. My judgment and affections have long dwelt with great anxiety on the importance of instructing our fellow citizens (who are chiefly farmers) in the better understanding of their own peculiar calling, connected with education, general and particular, and that sovereign and final remedy, to the restoration of our poor lands, and their ultimate perfection—the colonization of our free blacks in Africa—a subject which cannot, with propriety, be agitated in the South, without the most positive assurances that they who recommend its institution are as fully aware of the necessity of attending to every prudent and perfectly constitutional step leading to its consummation, as the bitterest enemy of the glorious scheme. I am only waiting for the aid, and connection of two gentlemen, whose taste and talents qualify them to progress in a work, to which I can add but little more, than great zeal and good wishes, with some imperfect plans and reflections, and a pleasant situation for an agricultural school. Should I be so fortunate in my lifetime to establish, on a good foundation, an institution bearing such a relation to Fellenburg's, as the political situation of our country will permit, and an agricultural paper, well edited, a reporter for it, embracing also colonization, it may prove to be a source of moral and political benefit to our country, and if so, will be a sweet reward for all my feeble attempts to promote the cause of agriculture. Your invitation to say something on the subject of agricultural schools, you see, I have accepted with pleasure, and have almost unavoidably become a great egotist. Too many of us cannot labor in this cause, which you appear so much devoted to; and I am sure I shall not withhold a iota of my poor contribution to promote the success of your plans. Your situation is a most favorable one, with friends intelligent and numerous I trust. Visit the legislature, and make what impression you can. You may find some zealous friends to the cause, when they return home. Press your arguments on the agricultural committee—send an agent to the counties around to procure subscriptions, and leave no stone unturned, to make your paper as valu-

ble as possible, at the cheapest rate. I send you a few pages, which may be considered a very insignificant part of the all important subject; however, it may have the effect of stimulating others to pursue it with zeal and talents.

I am, very respectfully, your sincere well wisher, and obedient servant,
 RICHARD K. MEADE.

It may be thought presumptuous in any individual however respectful his approach to the legislature of Virginia, to solicit the attention of an appropriate committee, to one of the most important subjects coming under their examination. But its magnitude and future bearing on the prosperous and happy condition of this commonwealth, is readily sought for as an apology for this hasty and very imperfect notice of the subject, believing it to be of more importance to bestow some consideration on the work immediately, than to defer it for a more perfect exposition; when, perhaps, some gifted individual will bring it before the legislature in such detail and perspicuity, as to enable our representatives to act upon it with the greatest advantage to the state. The present very hasty, contracted and imperfect notice of it, has been in consequence of a recent correspondence with the editor of the Virginia Farmer, a work we should sustain for the honor of Virginia, being the first attempt at an agricultural paper in the state; and a much more recent resolve to ask the favor of the agricultural committee to investigate it, if possible, as an obligation due to our common country.

A traveller, of education and observation, seeks to apply the Fellenburg mode of education to the interests of the United States, and in so doing, discovers an acquaintance, not only with ancient and modern history, but with the actual existence of the prominent institutions of the old world, and by a still more recent examination of those of the new. The splendid plans of Napoleon, for the encouragement of science in France is taken into view. Thence, passing over to North and South America, takes the most effectual means of becoming acquainted with the real political situation of the people by travelling amongst them, and estimating their character by their progress in science, learning and virtue, through the various institutions fostered to promote the rational liberty and happiness of man.

"Europe," he says, "is rich in learned men, poor in citizens, who can say they have become patriots by their public education. In America, the old Spanish colonies have but changed the name. Liberal institutions exist—liberty not; for the people have not been prepared for freedom by any education whatever. In the United States, the congress and the government mingle not with ecclesiastical affairs, but they occupy themselves, also, not with the education, and only with the instruction of the citizens; and in this concern, the United States have done more than any other nation. This public instruction is the most brilliant part of their administrations, and their political institutions, and yet how much remains to wish for. Education is the most essential of all political powers. Patriotic citizens ought to co operate with all their power to extend this foundation of national welfare, and if I do not judge erroneously, the good will exist so to do. Is it not possible to establish in the United States, Fellenburg's system, as that of a national education? I am disposed to believe it is.—And permit me, with reluctance, to say, that it must be very generally regretted, that amiable, and highly talented gentlemen, should now lift their voices and wield their pens against a cause they once nobly advocated, denouncing themselves for having plead in behalf of suffering humanity—congratulating others that they have returned to their right reason in the advocacy of perpetual slavery—praying never again to be permitted to return to such weakness of intellect and resolve as might endanger the prosperity and happiness of the United States, and of Africa in the colonization of free blacks."

Would that a thousand responses were made. I too, am disposed to believe it. Such faith would soon have the effect of exhibiting scenes of improvement altogether visionary to those who cannot conceive the advantages to be imparted to agriculture, through a peculiar and appropriate education. If merely the improvement of the soil, and the consequent increase of the productions of the earth, with the immediate pleasures and comforts always attending them, find a limit to our expectations, we should have but a partial claim to the countenance and support of the good and the wise. But, when it can be demonstrated that the dearest interests of society are involved in this peculiar system of education—that religion, morality, political soundness; through the medium of republican simplicity; economy, and our general prosperity, are to be sustained by it, we earnestly solicit the aid of the intelligent and the virtuous: the offering in short, of all who can possibly look forward through the kind Providence of the Creator of heaven and earth, who is making the weak things of the world to confound the strong," who is pulling down high places, principalities and powers, and establishing in their stead the rights of the human race. Education is the grand medium by which the magnificent work is to be accomplished. He who once spake light into existence in a moment, we have reason to believe, has ordained that moral light should be gradually spread throughout the world; and if in the course of its operation, many reverses, and apparent difficulties should occur, its friends must not relax in their faith or zealous works. In its accomplishment some of the best blood of the old, much of the treasure of the new world, will be offered as a willing sacrifice to the principles which are leading to the true liberty and happiness of mankind. It should be a grateful theme of contemplation to the people of this new world, (United States,) who are progressing in the arts of peace and civilized society, that if ever an occasion of bloodshed should occur amongst them, it will be in violation of those principles which have already been made sacred by the sacrifices of their forefathers, and not to acquire a single right or privilege essential to their happiness in the engagement of life, liberty, and our holy religion.

"Agriculture," this observer continues, "is the only foundation of public wealth, and consequently, a national education must proceed from that point—call it state if you please. Nature herself has directed the inhabitants of this country to adopt it. But agriculture in the United States is entirely different from that of Europe. Whoever would introduce the latter into this country, would make a ruinous calculation; and whoever would establish an institution similar to that of Hofwyl, cannot succeed, if he begins not to take the plough in the hand, and to study practically the American agriculture. I have often heard the objection, that this agriculture is at present in its infancy, particularly in the west, and I am aware of that. But in order to improve it, it will be necessary to know all the advantages, and the disadvantages of what ought to be improved. After an exact knowledge of the existing deficiency, it will be impossible to attempt improvements, and to bring the American agriculture where the European dwells, to the highest perfection." He goes on to sustain the importance of giving an agricultural education to the poorer classes.

"The children are retained in a simple career, in which they can live comfortably, satisfied with themselves and their employments—a tendency whose high importance cannot be doubted in political concerns. Odious feelings and jealous dispositions are destroyed in the bud. In this course of instruction no useful knowledge is refused, but every useless information rigidly removed. Mr. Fellenburg thinks that there is enough to do in concentrating their education, in the formation of their hearts and character, in upholding the faculties of their understandings, and the abilities of their hands. Every instructed proprietor who has studied and understood the aim and means of this plan, can found on his own property, a school for

the poor, and exercise over it all necessary attention to insure its success, provided he possesses force of character and energy of mind. In the Wehrly school at Hofwyl, there is no exclusive method to give a special account of; and nevertheless, there is in that school, an excellent kind of proceeding, that a good mind can understand, and every intelligent man learn. If he will take the trouble to reflect and study."—The accounts of this division of the establishment folly prove the fact, that these poor boys by their labor support themselves and the expenses of it, while in the course of twelve or fifteen* years, they are receiving an education the most appropriate and important to their own happiness, and the well being of society.

"In founding schools in the United States with the view of improving the poorer classes of society, all the principles of the Wehrly school, and the consequent proceedings should be adopted, but we should avoid the inconveniences inseparable from disadvantages, which result from circumstances appertaining only to Hofwyl. Allow me to make open and candid observations concerning the greater part of your country, whose political institutions I must forever admire. It is here, as in every part of Europe, impossible to observe closely the mass of the people without being struck with their great want of correct information. It is difficult not to see, that a great number of men, respectable for their position in society, cover the voice of philanthropy; men who see some philosophical incendiary in the attempts to enlighten the people who pretend to understand the usefulness of knowledge, and the perils of ignorance, and yet who, from trivial common place expressions, and by frantic, vain, half-instructed people, proclaim eternal war, not only against the misuse of instruction, but against instruction itself. The great majority of the people in several states of this union, are exactly of an opposite opinion, and those who know not how, know what they will, and that step is immense.—And whatever may be the situation of man, it cannot be inconvenient to uphold the justness of his mind, and the soft affections of religion and morality. It will be most an object to determine what knowledge is most useful to the people—we have already many notions about the kind of instruction they want. The only one that remains is the union of philanthropy and fact." We fear there is too much truth in the observations of this gentleman on the educational state of our country, especially when compared with his critical, just, and truly important views of the subject—but we would still hope that the vivid impression made on his mind from the great anxiety to have things as they should be, rather than as they really are, has led him to believe there is a greater degree of ignorance than there really is—we say this, for the honor of our country, hoping she will take every advantage of the lectures of a friend, who has not meant merely to censure, but to advise for the general weal.

In reference to the importance of educating the poorer classes of the youth of this country, your humble communicant, in mingling some of his own views with those of our traveller, believed to be specially suited to the circumstances in which we are placed, has the presumption again to appeal, through this more appropriate medium, to the farmers of Virginia, having some time since addressed them in vain, he fears, on the interesting subject—but he will now renew that effort with the hope that every succeeding year has rendered it more probable, that through a general advancement of society the subject of educating our poor youth in an especial manner, from both its propriety and necessity, will be discussed in our legislative halls, as not less important than the various internal improvements esteemed so essential to our prosperity; and if it can be proved that the success of our agriculture is intimately connected, and

*The time might be limited to eight or ten in this country.

much dependent on the improvement of the morals and intellect of the poorer classes of our population, there will be an abounding motive, a two-fold reason for snatching from the paths of ignorance and vice so large a portion of our fellow beings. Its peculiar and immense importance in our southern and western country is what will be chiefly dwelt on. The vital bearing it will have on the interests of the southern farmer, and planter, in keeping up the most careful and decided lines of distinction between the white and colored population, must be obvious to all reflecting persons; but perhaps there are too few who have traced to its ultimate probable termination the direful effects of permitting a considerable part of our white people to be abandoned to the society of the colored, who, from an awful necessity we are compelled to keep in a comparative state of ignorance; for which, we would ask the due consideration of all liberal and enlightened persons, and the forgiveness of that God, who we trust will recognize it as a necessary, though temporary evil, and expedient for the general preservation of good order and government, and the consequent aggregate happiness of society. It cannot be disputed, that the agriculture of our southern country has been, and still is, to a great degree, conducted by a class of persons (called overseers) whose information, habits, and manners, are ill calculated to advance the solid and permanent interests of the soil, but whose peculiar situation we will forbear to comment upon, (not being willing to wound the feelings of the least member of society,) further than to remark, that while the landholder has been engaged in dissipating his fair inheritance in a thousand different degrading ways, falsely called the generous flow of soul, his agent, has either been more than industriously engaged in supplanting him, or has been partaking of the same scenes of a lower grade, which has finally involved them both in utter ruin. If this picture is true to the life, how much will it become our farmers first to reform themselves, and then to pay a willing tribute for the education of the poorer classes? Sheer selfishness would dictate such a measure, if their sober judgment could be brought into free operation through the exclusion of ardent spirits and idle habits, and the adoption of temperate and industrious ways. Agents and sub-agents we cannot avoid, especially in our southern country, it will become us then, to make them faithful and intelligent, our own immediate interest, and that of the community is alike concerned. Who can doubt for a moment, the two-fold importance of training boys to the practical and laborious habits of agriculture, to become stewards and managers for men of landed property who cannot themselves go through the toil and attention requisite to its success—boys, who otherwise, perhaps, might have been tenants of a penitentiary, or dragging out a miserable existence under the pretence of following some half-learned trade, if any thing beyond a day laborer. To descend on the moral and political advantages attending a religious, and good English education, I leave to the immediate advocates of Sunday schools, temperance societies, and all such useful institutions. I will endeavor to urge something which may be practicable in relation to this kind of education, and as introductory to it, let the words of our late lamented Monroe bear witness: "I have no hesitation, however, in assuring you of my decided approbation of the plan suggested in your letter of connecting education with labor, with the view to improve the minds of our citizens and the agriculture of the state. By connecting them, many in the most humble walks of life will receive a good education, and be qualified for respectable stations, who would otherwise remain unlettered and ignorant. It is by extending information to the body of the people, that the best possible support will be given to our free system of government."

At the age of ten or twelve, when the labor of a boy should fully support him in a plain way, let as many youths be selected from districts of country, in such a manner as the legislature may direct, having

a teacher qualified to instruct them in all the necessary knowledge to be conveyed through the medium of the English language; an education which may be considered a good foundation for every useful occupation in life, not requiring a knowledge of the learned languages; an education which would not afford a favorable opportunity, to the development of such capacities and talents as would merit extension and patronage, from sources inviting to science and learning, where first impressions might be still further improved, and finally matured into character fitted for the most important trusts in our country. Their time should be divided between the labors, pleasures and amusements, in fact, and their routine of studies.—Their teacher, to be always with them, whether laboring or learning, save in the hour of free recreation if by experiment it should be thought necessary.—The teacher, as responsible for their progress in learning, would be, of course, tenacious of that portion of their time devoted to study, a sufficient guard against encroachment from another department. Exception may be made in favor of agricultural pursuits at particular times and busy seasons, by permission of the commissioners or trustees of such establishments. On the other hand, a farmer, selected for his general suitableness in the engagement should have the right to one-half of their time, directing their labors at his convenience and interest might dictate within the bounds of his farm as a remuneration for their food and clothing, which should consist of such as could be raised and made on the farm. A small expenditure for books, and the pay and board of a teacher, would be asked of a wise and generous government. Are there not many respectable men and good farmers, whose principles would induce them to adopt an expedient of this kind in preference to another mode of cultivation, more especially where a farmer has sons of his own to educate? It is not intended here to enter into a detail of any system, but merely to suggest, in plain language, an entire conviction, that a large portion of the poor youth of our country might be made mainly to educate themselves by their honest labor, in some judicious system, founded on the principles of the Fellenburg plan; in which their ultimate prosperity might be secured by the moderate contributions of the rich and middling classes; by some exertion of their talents and attention, first to procure the passage of the necessary laws, and then to see them executed.

To the adoption of some system of education, farmers and all others are earnestly exhorted, in the recollection that many of our revolutionary sages have pronounced that on the education of the present generation, depends the weal or woe of our commonwealths.

If the foregoing suggestions in relation to the union of education and agriculture should be met by any objections, it is hoped they will be, with the view of amending or substituting something better. Possibly it may be thought that this laboring class will be indisposed to the continuance of their industrious habits when they are of age and independent of any further restraint, because they are in possession of mental acquirements. Let it be answered that the very reverse must be the case, when exceptions are not made by an application of a different taste and inclination, through more than ordinary talents, to some other calling; because, their labor has been their pleasure and their bread; while their learning has been their meat and drink, and their delight, having been disposed to it, principled in it, and taught to venerate the plough, it will have become a second nature; and therefore, it is to be reasonably calculated, that the great majority of them will voluntarily pursue the mode of life they have been accustomed to follow. They will consequently seek employment in the agricultural line to the great advantage of landholders, and will, by the judicious application of their knowledge and physical powers, acquire, in a reasonable time, a better and more substantial foundation than three-fourths of our

professional men. What farmer, in his senses, would not prefer an aid or assistant (call them what you may, manager, overseer or steward) of good, industrious, laborious habits, with ability and knowledge in their business, to our present race of managers? Who will not prefer such, as agents, tenants, croppers, &c. and when they shall emigrate to new countries, they will carry with them the materials for good citizenship; be a credit and blessing to their newly adapted country, and never cease to remember the soil, and the circumstances which gave them respectability and honor among their fellow men. But, we believe, one of the most prominent advantages, especially in *Maryland* and *Virginia*, would be the successful application of their peculiar acquirements, to the restoration of tens of thousands of poor acres.

Perhaps, an inquiry may be made into the bearings and tendencies of this system of education—that it may have the effect of diminishing the value of our colored population.

Shall we regret the gradual exchange of so many degraded human beings, for a hardy intelligent race of freemen? If education can possibly have the effect of raising up one kind of population, and removing another, how gracious will be its operation. Africa's bosom is open to receive her sons. Who is there base enough, willingly to withhold the blessings of education from our poor white population, with the view of detaining longer amongst us the blacks? Who so vile, so little of a republican, to prefer a moiety of freedom to its full extension! None! Then all will lend their aid, to a discreet, prudent, and constitutional way of bettering the general condition of our common country, and particularly to rescue from ignorance the rising generation of poor, who are closely imitating the vices of the rich, rather than emulating their virtues. He is the happiest man who has a working hand, a thinking head, and a feeling heart. And let it not be forgotten, that our duty, and our interest, is seldom separated. But in the event of this system receiving public countenance, the question may very properly be asked, where are the teachers? The appropriate ones, alas! are not immediately to be obtained. Suffer then, this inquiry to inspire our young men to prepare themselves for the important task, for the honorable and useful vocation of teachers. Tens of thousands of dollars are annually paid the meritorious young men who emigrate here from our eastern schools and colleges, while other tens of thousands are yearly expended, worse than thrown away, by the dissipated youth of our land. This is a critical period in our history; few, very few, read, it is feared, with that attention and observation becoming men who should be looking forward to the excellency and prosperity of our institutions, through knowledge and virtue, rather than through wealth and influence.

But though we are restrained by an irremediable policy from the indiscriminate instruction of the people of color, we may nevertheless engage in Agricultural pursuits a limited number to be educated for the colonization of Africa. A sufficient education may be given them, fully to answer that purpose without the least expense to the country—from the age of ten years, they may be made not only to support and educate themselves, but lay up a handsome outfit for removal and settlement in Africa. This is a subject, too, which must be acknowledged truly worthy the deliberations of our state legislatures. It is high time for a people who have been so long drawing their chief support from the labor of others, to be willing to make some retribution.

O, my countrymen, look!—look at France! She, who so gallantly shared her blood and treasure with you, to secure your independence—behold her now, with reasons and motives, nothing to be compared to such as we can offer—removing, by the hundred, the barbarians of the North of Africa, to France, where they are to receive an education, which will best qualify them to be useful when they are returned to a work of reform in their own country. Glorious, gen-

erous, magnanimous people! This is a deed as far transcending the most splendid achievements of Napoleon, as the benignant rays of civilization and religion, transcend the splendid conquests of the ambitious conquerors of either ancient or modern times.

We think we see clearly in this transaction the progressive surrender of ignorance and vice, to intelligence and virtue—of Mahometism, to the spread of christianity. If this picture should be marred by any one saying, that France is interested in this act—we care not—but looking to the inevitable effects of such a measure will drop a curtain over some of the imperfections of our nature. So are we interested in the colonization of our negroes in Africa; but, we hope, for the charity of those who are not immediately connected with the subject, while the prosperity of two continents is promoted by the restoration of the original inhabitants of one of them. Can it be prudent to let time or opportunity pass by, in controlling by all other than arbitrary means every portion of the African continent, suited to the colonization of our free blacks?

(From the Genesee Farmer.)

RECLAIMING SWALE LANDS.

MESSRS. EDITORS:

Le Roy, April 12, 1853.

Your correspondent, J. M. S. inquires through the medium of the Farmer the best method of cultivating, or bringing too, low black ash land. Different pieces of such land may require different management. But most of such land is what is commonly denominated swamp, or swale land, and is made so by the obstruction of the water courses that receive the superfluous waters of the adjacent land. The timber having fallen for centuries across the natural and lowest passage for the water to pass off, the water has extended itself to various distances on each side, and formed a swamp, or swale, as it is more generally called, which is covered with water most of the year. By tracing this swamp or swale to its head, or source, most generally may be found springs of water, of some size, either open, or often concealed, by their source being blocked up by leaves, timber, &c. and the water having to make its way slowly by percolating and soaking through a large mass of matter that composes the swamp, keeping it at all times wet; and most of these swamps have a small descent, sufficient to pass off the water quickly, by merely removing the obstructions that have retarded its passage.

To cultivate such lands, the lowest part must be searched for and found, a sufficient ditch there made to carry off all the water quickly, and of sufficient size, particularly at its outlet, to carry the stream of water without any obstruction,—with side cuts to lead to the main ditch, wherever needed. The land will then become dry, and the timber may be cleared off without difficulty, and the land will be in readiness to receive timothy or redtop grass seed; and if the work is well done, a luxuriant crop of grass may be expected. Sometimes it will be the case, that in very extreme dry weather, before the muck or the vegetable matter that composes the surface be decomposed completely, it will dry up and the crop be light,—and if fire should get to it, the destruction of the surface is almost inevitable.

It becomes necessary, therefore, as soon as the roots are rotten enough to admit it, to plough and mix the muck with the earth beneath; and during this operation, the drainage ought to be consummated,—which may be, in the following manner:

Set a row of stakes at two or three rods, on each side of your ditch, for a guide,—plough to your stakes, by turning the furrows from the ditch, leaving the dead furrow at the ditch itself; and at subsequent ploughings, plough in the same direction, leaving the dead furrow at the same place, until a hollow be made sufficient to carry off the water. To prevent too great an accumulation of earth at one

place, increase the width of your ploughings (or lands) at each time.

By this method, a ditch may be formed that will not be liable to fill up by the treading of cattle. Carts can pass it with ease, water will flow up its sides, when high, and retire, when low, without doing any injury.

The remaining part of the swale may be ploughed in a contrary direction, leading the dead furrows to the main artery—and when finished in a workman-like manner, no water will stand in a puddle to stagnate, on any part of it. The most part of the work may be done with the plough, and in preparations for a crop, leaving but a little to be done in the cross ditches near the main one,—to be thrown out by the shovel, or to be leveled with the hoe.

I once had a very low piece of black ash swamp, on which, before I commenced upon it, the water stood, nearly all the season, about knee deep,—a real musketoe, fever and ague hole,—a receptacle of all uncleanness. I cleared the timber from it, made a ditch and sowed it with grass seed. When the roots of the timber became a little rotten, in October, I commenced ploughing it, burning the stumps and old logs as I went. The following season, and during the summer, when the muck was too moist to burn, but not too moist to plough, I finished my ploughings, got it in fine order, and the first week in September I sowed it with wheat and seeded it again to grass,—and although it was my first attempt, and the drainage not perfectly done as it might have been, and although the fire had got in, the previous season, and done some damage, I obtained rising of thirty bushels of wheat to the acre,—and should have got more, had not a good deal of it been lodged down.

T. T.

(From the Genesee Farmer.)

AGRICULTURAL IMPROVEMENT—AGRICULTURAL SOCIETIES.

Rensselaer county, April 23, 1853.

In a former number I endeavored to show that the improvement of agriculture and the present generation of operators was to be effected, or an impulse given to produce that effect, firstly, by the distribution of agricultural papers. I shall now endeavor to show that it is to be accomplished, secondly, by the formation of agricultural societies. That the united exertions of an organized body can accomplish more and bring about results sooner than that of individuals, is a position that will probably not be controverted.—Else, why do men associate to promote the great objects of benevolence and humanity? Why are associations formed for the distribution of the Bible? Why have we Missionary, Colonization and other Societies? Why is the world moved as it were in a body, on the great and important subject of Temperance? Who, but believes, that more has been done within the last five years, towards destroying and ridding the world of that hydra, intemperance, by the formation of national, state, county and town societies, than could have been accomplished in half a century, by the insulated exertions of humane and philanthropic individuals? Organized associations, act as a grand lever upon public opinion, which must be moved before any great public object can be accomplished. Why not then, if we gain so much power, and so great an advantage is to be derived from them—encourage and establish societies for the promotion and improvement of agriculture and the mechanic arts? None will deny their importance—none their need of improvement. Let societies then be formed in every state in the union, in every county in each state. Let them be managed principally by practical farmers. Hold out inducements to excite a spirit of inquiry, and of emulation in all the various branches of husbandry, and the mechanic arts. Let our farmers associate and interchange sentiment—let each profit by the experience of all the rest, and soon,

the face of the country will be changed—soon will our productive valleys double their increase—our barren plains become fertile, and the “wilderness blossom as the rose.” Nor will its effect be less visible upon the moral and intellectual state of our yeomanry.—The first and best employment of man, will soon be regarded as honorable and pleasant, as it has been wont to be considered mental and slavish. Mind will range the sylvan scene, and men’s highest ambition will be to excel in the application of science and the production of successful results. Honor’s alluring wreath will encircle the brow of him who shall produce the greatest results with the least expense.—Improvements in the implements of husbandry will follow. Labor saving machinery, be introduced and adopted. The mind will aid the hand, and our country exhibit one continued scene of improvement, happiness and prosperity.

But there are no doubt many who will say these are the dreams of a visionary—the vagaries of a wild and distempered imagination. In answer, I say, let me call your attention to those countries in Europe where agriculture is patronized, and where societies are formed for its promotion. Turn your eyes to those districts in our own country where societies have been established, and compare them with those that have none—are not the same results produced as above stated? The moral and intellectual condition of the people improved—the state of agriculture from thirty to fifty per cent. advanced—and the value of the soil correspondingly enhanced. Our state society has been organized but a year, and already do we see and feel its influence—its branches are extending far and wide. Jefferson county has long had her society, as her improvements bear ample testimony. Oswego, Monroe, Onondaga, Saratoga, Columbia, Clinton and Essex have recently organized societies, and I hope the day is not distant, when every county in this state, at least, will do likewise. Let us go on then heart and hand, put our shoulders to the wheel and forward that which tends to so much usefulness. Let us emulate those that have preceded us in disseminating knowledge—ameliorating the condition of man—and spreading the blessings of Providence in such profusion.

VOLO.

(From the Genesee Farmer.)

PERMANENT PASTURES.

Some of the old fields of the Genesee country, which have been cleared more than thirty years, and which might produce excellent crops of wheat,—have never yet been disturbed by the plough. I believe these are generally kept as pastures; and some of our best farmers consider them more valuable than any other lands of equal quality which have been laid down to grass. On my farm, I have one field yet remaining in this condition; and the question has been several times agitated, whether we ought to plough it up, or not? The point is not yet determined.

To the rich vegetable mold near the surface, is ascribed the peculiar productiveness of such lands; and in a note to the American edition of “The Code of Agriculture,” the writer asks, “If when a rich surface has been got, should it be destroyed?” This is the very question also, which I wish to ask.

Sir JOHN SINGLAI, although he thinks “It is often desirable to keep one or two inclosures in *perennial pasture* for feeding sheep and cattle; yet his regard for *old turf* or *permanent pasture*, is not so great as that of some other writers.” On this subject he makes the following remarks:

“The principal objection to the conversion of meadow into arable land, arises from an alleged inferiority in the new, when compared to the old herbage; a complaint which probably originates, either from the improper choice of seeds, or from giving them in too small quantities, thus favoring the growth of weeds. A gentleman who had a large farm, principally consisting of strong rich clay, (every field of which, with hardly an exception, he occasionally broke up,) was

accustomed to lay them down with a crop of barley, and to sow fourteen pounds of white clover, a peck of rib grass, and three quarters of hay seed per acre. By this liberal allowance of seed, he always secured a thick coat of herbage the first year, which differed from old pasture, *only in being more luxuriant*.”

LORAIN, in his observations on the agriculture of England, evidently considers this partiality for old pastures as an unfounded prejudice. He says, “The landholders of Great Britain, would have long since seen the value of convertible husbandry, had not their judgment been blinded by the imaginary value of their old grass grounds; for they consider submitting them to the plough, little less than sacrilege; and it appears that the opinion is not confined to men of contracted sentiments.

“When grounds become matted with the roots of old grass plants, it does not appear reasonable to suppose them capable of producing crops that will bear any tolerable comparison with those gathered from grounds of equal quality, which have been recently laid down with the best artificial grass seeds; for the roots of these young plants are healthy and vigorous, and capable of pressing forward in search of nutriment through a soil which being free and open, admits a ready passage for them in every direction.

“It should be laid down as a *maxim* in farming, that no grounds should continue in grass, until they become hard bound or consolidated; and the roots become old and matted.—Great crops of grass, can be no longer obtained than while the soil continues free and open, and the roots remain unimpaired.—If one-fifth part of those lands were annually cultivated in summer fallow crops, and another fifth part in grain, the remaining three-fifths would produce more grass than the whole while lying in old pastures.

“Why, then, should enlightened cultivators dread the effects of the plough on their grass lands?”

In some future paper, I intend to give a different view of this subject, and in the mean time I hope some of your correspondents will favor us with their remarks.

A FARMER.

(From the Genesee Farmer.)

LEACHED ASHES FOR MANURE.

MESSRS. EDITORS:

Potter, April 13, 1833.

Many years ago I was on a visit to an uncle of mine on Long Island. A man brought a load of wood, corded it at the landing, and applied for a load of leached ashes, (fourteen bushels,)—he received them, and paid my uncle four dollars. I remarked, that the man could never see his money again, if he used them as manure. My uncle replied, I know not how it is, Richard, but it is certain *that we grow rich by it*. This short observation, I think, contains more of argument than even Dr. Mitchell could have given us in volumes of theoretical reasoning.

It was the result of experience, and I know of many thousand acres on the island, which were once too poor to produce even mullens and rib-grass, which now cut from one and a half to two tons of clover hay per acre; and this has all been done by buying leached ashes at from twenty-one to thirty-two shillings for fourteen bushels, and carting them from one to ten miles.

I therefore conclude that leached ashes are a good manure, and if properly applied, will be found invaluable even in western New York. The modes of using them are various, and may be the subject of a future communication. Yours, etc. R. M. W.

(From the Maine Farmer.)

MR. HOLMES:—I wish to communicate to the public through your paper a new and very expeditious method of “harrowing in” the English flat turnip seed. Sow the seed in the usual manner—then turn your flock of sheep into your yard and drive them round for a few minutes, just enough to give them a little exercise, and the work of harrowing is done.

Yours, &c.

FLAT TURNIP.

HORTICULTURE.

(From the Genesee Farmer.)

PRACTICAL HINTS.

Young says, “the undevout astronomer is mad.” This remark, may well be applied to the Farmer and Botanist. The plants we cultivate, disclose to the enlightened mind, a thousand wonders unobserved by the ignorant. They open a field for rational contemplation and innocent pleasure, well fitted to improve the understanding, to refine the feelings, and to elevate the soul to a holy intercourse with our Maker.

God may be seen in the garden and in the field; and here we may walk with him, as well as in the sanctuary. The farmer, who is unobserving of these things, and pursues his labor without ever raising his thoughts to the Author of all good, loses the richest and noblest pleasure, which his employment affords.

My present object is to make a few remarks on vegetable physiology, which have been a source of pleasure and profit to myself, and possibly may be to others.

In our fields of corn, we behold the blade ascend, and the ears fill with grain; and in the course of a single season, several tons, on a single acre, are elevated above the surface; and in our forests, where this process has been going on for a succession of years, we behold hundreds of tons, thus raised, particle by particle, from the earth. Here is an exhibition of power, which invites our investigation, and the inquiry naturally arises how this matter is elevated.

Some may say that it is alone by the immediate power and agency of God, by a kind of continued creative effort. But God, so far as we can observe, operates by second causes, or through the instrumentality of means, and to refer the matter to the immediate power of God, leaves the matter unexplained.

Another says, vegetables are expanded and elevated by *capillary attraction*, that is by the attraction which causes fluids to ascend in a sponge or a heap of ashes. But water will never ascend in a sponge higher than the upper surface, and by this power, it is obvious that a vegetable could never ascend above the surface of the earth; or suppose it to have attained a given height, it could never rise higher.

We must therefore look for some other power continually exerted to push the plant upward to its destined elevation. This power we find in *heat* by reason of its expansive influence on fluids. The sap is supposed to ascend through the pores of the plant, as the mercury ascends in the tube of the thermometer, by the expansive power of heat.

The whole albumen, or white part of the wood of a tree next the bark, consists of an aggregation of pores or small tubes closely combined; and the heat which expands the ascending fluid, contracts the tubes in which it ascends. The solid part of the tree is indeed expanded, and the obvious effect of this will be to contract the cavities of the tubes which it contains. If the tube and the ascending fluid were expanded alike, there would be no ascent of sap.

That sap ascends, and the plant is expanded and pushed upwards by the expansive power of heat, is fully confirmed by the experiments of Mr. Hales.

This gentleman, after cutting off grapevines, closely fitted upon the stumps glass tubes. In these, as soon as the morning sun began to give its warmth, the sap began to ascend, and continued to ascend through the day till the heat began to abate, when it again subsided in the tubes. When a cloud obscured the sun, it would sink. These tubes which were placed many feet above the earth, sent up the sap much higher than those which were placed near the earth. The reason evidently was, that the former had a length of body admitting of a greater expansion than the latter.

From these facts we see the wisdom and goodness of God, in the alternations of cold and heat. In the heat of the day the sap ascends and sends up the stalk; at night the sap descends, and the earth, being

warmer than the superincumbent air, the sap is propelled through the roots and causes their growth and expansion.

In the cold and wet seasons, which we sometimes have in May and June, the blades of corn turn yellow and their growth is apparently checked. This I formerly witnessed with some impatience, but I have become quite reconciled to it, from the belief, that while the growth of the blade is checked, the root is growing with perhaps unusual rapidity.

Without an interchange of cold and heat, vegetation is feeble and sickly. Moist and hot weather we know is favorable to vegetation; but when this is long continued, the stalks of grain become feeble and tender—hardly able to bear their own weight.

I remember well such a season, when flax and oats, which for a while gave unusual promise, afterwards fell by their own weight and gave a very indifferent crop. Such was the effect of long continued hot weather on the wheat crop in 1831.

The stalks and roots of plants act reciprocally upon each other. The root sends up sap to nourish the stalk; the stalk returns the sap to nourish the root. The seed when committed to the earth first sends forth the root, and the root, when it has attained a moderate extent, returns the sap to send forth the blade.

In our perennial plants and trees, the root is the reservoir for the future growth. By the growth of the summer the powers of the root are exhausted; and again by the descending sap of autumn the root is replenished.

Hence we see why a too liberal pruning, when the foliage is in its greater vigor is injurious. It deprives the root of its resources.

Hence we see also, why our cultivated grasses are sometimes injured, when mowing is immediately followed by close feeding the after growth. The root is injured because its exhausted energies are not renewed by a subsequent growth.

Those grasses are most injured by mowing and feeding, whose leaves are chiefly upon the stalk, as timothy and red clover. Those are least injured whose leaves spring chiefly from the root, for instance spear grass, red top and white clover. These latter grasses, having their leaves near the ground, cannot be so much injured by the scythe and feeding, but that they will survive while other grasses die.

Every much question, whether good policy would justify our suffering an animal to go into our mowing lots, except to remove the hay. At any rate they should not be put in, till late in October, when the after growth has attained full size, and the roots of the grass are replenished.

Hence as we see, why bushes and weeds may be killed by cutting, when their vegetation is most perfect. Bushes should be cut in the latter part of August before the descending sap of autumn begins to replenish the root, that is, just before the commencement of cold nights when the leaves begin to turn yellow. Weeds should be cut just before the seed comes to maturity. The Canada thistle, if cut at this time, and the subsequent growth prevented, is as easily subdued as any other plant. Repeated experiments justify me in this assertion.

The roots of esculent plants, such as beets, turnips, onions and potatoes, it is well known, receive their growth from their tops. The unripe onion continues to grow for weeks after it is pulled. Potatoes of considerable size may often be found growing out of the stalk, when it has been pulled and laid upon the ground in its unripe state.

We also hence learn the impolicy of cutting the tops from corn before it ripens. The trifle you gain by cutting them, you take from the ripening ear. I once cut a few hills when the green corn was just fit for cooking. The grain apparently grew but very little afterwards, and shrunk to half its size.

I throw out these hints, hoping that some more able pen will give us a more full and perfect account of the vegetable economy. E. D. ANDREWS.

(From the Genesee Farmer.)

HORTICULTURE.

We perceive an increasing liberality of opinion among our farmers on the subject of gardens, and more especially of flower gardens. This is in the exact order of nature. The adventurous yeoman who pitches his tent in the wilderness, will be engaged in more important concerns than cultivating flowers, necessity being the first law. The forest must be subdued; provisions for his family, and fodder for his cattle, must be provided; and when, after his crops are secured by good fences, and the winding path among the trees, is deserted for the regularly laid out highway, there are houses and barns to build, and to pay for, before the frugal husbandman allows himself much of the luxury of congregating the beauties of nature. Ornamental gardening belongs to the last class of rural improvement. "When ages grow to civility and elegance," says Chancellor Bacon, "men come to build stately sooner than to garden finely, as if gardening were the greatest perfection."

When we have heard, therefore, the question in reference to flowers, "what are all these things good for?" expressed in the tone of indifference or contempt, it has excited in us no surprise. Many of our farmers have carved out their own fortune with hard hands. Habits of frugality so long persevered in, continue, in men of a more rigid fibre to operate when the necessity no longer exists; and like the planetary bodies, they retain their *momentum*, and roll on in their old orbits. Of such, however, (whom we think are only a small minority,) we will take the liberty to ask in turn, what is any thing good for, but as it conduces to our pleasures and our comforts? Objects may give us pleasure which we neither eat nor sell; and those who are the *most saving*, indulge in many such luxuries. We wish them to reflect a little more on this subject; and if their wives or daughters want flowers in the garden, indulge them—it will cost but little, and may gild many a leisure moment.

Our main object, however, at present, is to recommend the kitchen garden; and to induce our farmers to raise a greater variety of good things for their tables. Cabbage, and potatoes, and beets, and parsnips, are all excellent,—we could by no means do without them,—but some kinds of cabbage are better than others, as well as some kinds of beets, or of potatoes. Try different kinds and find out the best. Differences of taste render it proper that each should examine for himself.

A few years ago cauliflower and broccoli were very rarely cultivated in the Genesee country; and we remember to have heard the idea advanced that none but a skilful gardener could produce them. It is not so—they require no more skill than cabbages do.—Our first attempt at growing them, happened in an old barnyard where manure was most plentifully mixed with the soil, and our success was eminent, for plants of this kind, are *course feeders*. Many of our neighbors had never seen such things; but from that time down to the present, these have ranked among our *indispensables*.

We must bring our introduction to a close however, in order to make room for the following paragraphs, taken from the *Memoirs of the Philadelphia Society for promoting Agriculture*, volume iv. It was from the pen of Judge PETERS, and appears in the index.

"Horticulture is mentioned, not for reference, but most serious regret. No communications appear in our volumes on this subject. And yet the management of a KITCHEN GARDEN, as it is called, is of the first importance to every farmer; and is most lamentably neglected. Few of our farmers sufficiently attend to their gardens; and too many neglect them entirely. If more vegetable food, and less flesh, were consumed on our farms, the more health and comfort would be the results. Nor would economy in our domestic affairs, be found the smallest consideration. The cheap luxury of garden fruits and vegeta-

bles, the innocent employment of time, and the health insured by them, ought to be incentives to a most careful and intelligent attention to their culture."

RURAL ECONOMY.

(From the Genesee Farmer.)

ON THE USE OF SALT

AS A CONDIMENT FOR DOMESTIC ANIMALS.

Although salt is not indispensable to human life, it is indispensable to the comfort and health of man. It is not convertible into nutriment, but is a strong stimulant to the animal fibre. We are not satisfied with its occasional use, but desire to have it blended in every meal of which we partake. Most quadrupeds, and particularly domestic breeds, have a like fondness for this condiment, and its use is probably as grateful and beneficial to them as it is to us. And why should not the *daily* use of it be extended to them? From some years' experience, in which salt has been daily accessible to my neat cattle, I am induced to believe, that this is far the best way of administering it. I have salt troughs under my sheds, in which there is a constant supply. The cattle never take it in excess, and consume very little more than when I gave it to them but once in a week.

I apprehend the importance of this condiment to farm stock has not been sufficiently reflected upon, or properly appreciated, by the generality of our farmers, particularly as a means of preventing, and often of curing diseases. I will therefore cite the practices of different countries and individuals, as calculated to afford useful hints to your readers upon this subject.

In Bengal, a *daily* supply of salt is given to the shepherd to feed his sheep, and the mutton fed in this way is finer than any other killed.

Lord Somerville restored the health of a large flock of merinoes, which had become quite sickly, by giving them salt *twice*, and sometimes *thrice* a week. He gave a ton of salt to a thousand sheep during the year. He says they require most in spring and fall, when the dews are heavy.

In Spain the shepherd is furnished with twenty-five quintals of salt for every one thousand sheep, which they consume in five summer months, not being fed with it in winter, or on their long journeys.

Mr. Curwen gave four ounces per week to each sheep, at two feedings of dry food, and when fed with turnips he says it should be fed to them without stint.

Arthur Young says, sheep should have as much salt as they will eat.

Lord Somerville, Mr. Young and Mr. Curwen, unite in urging its use as a preservative against the injurious effects of moist and wet situations. Mr. Curwen's flock was attacked by an inflammatory disorder; he gave them a considerable quantity of salt, and the disorder was immediately stopped by it.

On the farm of Mr. Mosselman, in the Netherlands, says Sir John Sinclair, the rot in sheep was effectually cured by the use of salt.

Mr. Bracebridge drenched his sheep affected with rot, night and morning, with strong brine, after which he did not lose one.

In Sweden, Saxony, Silesia and France, salt is given to sheep. They require it most when languid, or out of order, which happens in fogs, in heavy rains and snows.

Charles Adams used salt for ten years, as an antidote and cure for diseases; and in all cases of diarrhea. He gave three and a half drachms, in a dry state, introduced with a spoon into the mouth, and holding the chops a few seconds till the salt dissolved.

Cattle and horses are far less liable to disease in America than in Europe; and this is believed to arise in a great measure from the more free use of salt here than there. The duties upon this article in Great Britain,

for home consumption, until recently, have been so enormous, as in a great measure to preclude its being used for cattle. The bill of the cattle doctor has formed no inconsiderable item in a British farmer's expenditures. Here such expenditures are almost unknown. In the year 1822, says Mr. Curwen, *before I commenced giving my cattle salt, my farrier's bill averaged fifty eight pounds per annum, or more than two hundred and fifty dollars; and since I have commenced using salt I have never paid in any one year over five shillings.*

In the district of Champseau, France, and the adjacent countries, they were in the habit of giving every ox and cow four ounces of salt every eight days. When this practice is neglected, the animals eat less; they lose their spirits, their hair rises, they go licking in their stalls where the salt-petre is formed, they grow lean, become barren, and disease ensues.

The French Royal Academy of Science state in their memoirs, that salt augments the nourishment of the food of cattle, in proportion to the quantity given; that no ill consequence will follow from excess, even though it should be given them without stint.

It is a practice in our southwestern states, in travelling, to give horses solid food, with a handful of salt twice a week. A friend of mine lately performed the journey from St. Louis to Albany, on horseback, at the rate of forty to forty five miles a day. The horse was in good condition at the end of the journey. His almost only feed, west of the mountains, my friend informed me, was half a bushel of oats, and a little salt, placed in his manger each night.

In Germany, according to Count Rumford, salt is universally given to cows and oxen in a fattening state, and their fattening powers are found to be in proportion to the quantity given.

In Bengal fattening bullocks receive a daily supply of salt.

Sir Thomas Bernard kept a lump of rock salt in the mangers of four horses, spring and autumn, several years, the effect of which was, that three of the four horses were in good health, with very little exception, for fourteen years. The same gentleman says, that salt is given to animals when greater exertion is required of them; and that in the east, the camels are allowed salt during the passage of the caravans over the desert, as a support in the extreme they undergo.

Vailey, in his Farmer's Guide, says that a poor torn down horse, put into a salt marsh, is purged and cleared of every disorder, and immediately becomes fat.

Curwen, in his evidence before the House of Commons, considers salt indispensable to the health and thrift of animals; and that the first visible effect of salt to milch cows, was in its *freeing the milk and butter from all taste of the turnip.* My cows have been fed with turnips, spring and autumn, for ten years. They have always access to salt. I never experienced any inconvenience from the turnip taste in the milk and butter. I never conjectured the cause until I read the testimony of Curwen, above quoted. He latterly gave six ounces *per day* to his work horses, four with steamed potatoes, and two with steamed chaff. The following shows the quantity *per day* given to his stock, which he commenced with in April, 1818, and to which it had been beneficially increased in December, 1819.

April 1818. Dec. 1819.

	oz.	oz.
Horses,	4	increased to 6
Milch cows,	4	4
Feeding oxen,	4	increased to 6
Yearlings,	2	3
Calves,	1	1

A very common method of giving salt to stock, with us, is to mix it with the hay, when housed. It not only affords, in this way, a condiment to the animals, but tends to preserve the hay from injury when not perfectly cured. It is also applied to dry hay, straw and corn stalks, in winter, in the form of brine.

From these quotations, which might be greatly multiplied, I am confirmed in believing the mode I have a long time adopted to be the best, that of giving animals access to salt every day. This I do by fixing troughs under my sheds, in which salt is constantly kept. To prevent waste, a few slats may be nailed crosswise, at ten or twelve inches distance. I have seldom had a sick animal during the continuance of this practice. (See an interesting publication on the use of salt by Rev. B. Dacre, J. L. S. 1825.)

(From the Genesee Farmer.)

BUTTER.

This is one of the staple productions of our state; and every hint that serves to improve its quality, or increase its quantity, must be useful. There are various methods of making butter, as from new milk, lobbied milk and cream; and there is certainly a great diversity in its quality. The cause of this difference may partially be owing to the season, the feed and the breed of cows, but most is owing to bad management. Our dairy women are very much like their good husbands, apt to be somewhat conceited, too wise to learn, and generally believe their own mode the best, and never suspecting that philosophy or science can have any sort of connection with this humble branch of household labor. All seems to be agreed, however, upon the following points.

1. That cleanliness is the first requisite, for many and very obvious reasons.

2. That every sort of liquid should be separated from the butter—because if such is suffered to remain it soon becomes rancid, and tints the mass.

3. That the salt used to preserve it should be pure, because bad salt will not keep it sweet—rock salt, and that produced by solar evaporation, being deemed best.

4. That no more salt be used, than is necessary to render the butter palatable—all excess being injurious to the taste, and an imposition upon the buyer.

5. That the vessel in which it is packed should be incapable of imparting to it any bad flavor—wood abounding in pyroligneic acid, and red earthen being improper—the first giving a bad taste, and the latter, by reason of the decomposition of the glazing, which contains lead, being in a measure poisonous.

6. That when packed, the external air should be wholly excluded from the butter—because the air soon induces rancidity.

My dairy woman has added two other rules, which she deems all important to the preservation of good butter, but which I am induced to think are but little known and less practiced, viz:

7. That no water be suffered to come in contact with the butter in any stage of the process—because it tends to lessen the essential volatile matter which gives to butter its rich peculiar flavor.

8. To have the salt incorporated with the butter in the first operation of working, and after an interval of twenty-four hours, to apply again the butter ladle until the whole of the liquid is expelled. By this operation the salt is dissolved and effectually blended with the butter, which is freed more effectually from buttermilk.

I sat down to write merely an introduction to two tables, which I am about to copy, and which indicate the temperature at which cream may be most advantageously wrought into butter. It may be said that these will serve but little purpose, as a thermometer is seldom seen in a dairy house; yet it will show the importance of keeping one. A thermometer will cost two dollars, and I apprehend that its advantages will soon repay cost, in the dairy alone.

The Highland Society of Scotland offered a premium on experiments on the temperature at which butter can be best procured from cream. The following tables show the result of a part of these experiments. The detail may be found in vol. vii. of the Society's Transactions, p. 194 to 201.

Number.	Date of experiments.	Number of gallons.	Mean temperature.	Time occupied in churning.	Quantity of butter obtained.	Quantity of the churned milk.
	1825.			h m	lb. oz. diet.	lb. oz.
1	Aug. 18	15	55°	1 0	1 15 7.5	8 9
2		26	60°	3 15	1 15 3.2	8 8
3		30	62°	3 0	1 14 0	8 8
4	Sept. 4	15	61°	3 1	1 12 12.7	8 8
5		9	70°	2 0	1 10 10.6	8 7

OBSERVATIONS.

"The butter produced in the first experiment, was of the very best quality, being rich, firm and well tasted.

The second experiment yielded butter of a good quality, and not perceptibly inferior to the former.

In the third experiment butter of a good quality was obtained, but of an inferior consistency.

The fourth experiment produced soft and spongy butter.

The butter produced in the fifth experiment was decidedly inferior in every respect to any of the former specimens."

Number.	Date.	Heat of the cream.	Scotch pints of cream.	Degrees of heat when butter came.	Quantity of butter, lb. oz.	Time of churning.	Weight of cream.	Heat of air at 8 p.m.
					lb. oz. h. m.			
1	June 13	56	16	60°	16 8 1	20.4 to pt.	56°	
2		20 52	16	56	16 0 2	do	52°	
3		21 52	16	56	16 0 2	do	52°	
4	July 12	63	16	67	15 8 0	30.3 "	14 70°	
5	Oct. 20	50	16	52	15 12 3	0 4 "	1 50°	
6	Aug. 20	53 1	16	57 1	16 3 1	15.4 lbs.		

No. 1, shows the greatest quantity of butter produced by the above heats.

No. 2, the best quality of the butter.

No. 3, the fine flavor and quality of this butter could not be surpassed.

No. 4, the quality soft, white and milky.

No. 5, quality injured by long churning.

No. 6, quality most excellent, high in color and flavor, and solid as wax.

From the experiments, as shown in both tables, it would appear, that the proper temperature at which to commence churning butter, is from 50 to 55 degrees, and that at no time in the operation ought it to exceed 65 degrees, or fall below 50 degrees.

(From the Genesee Farmer.)

INTERESTING EXPERIMENTS.

In the January number of Sullivan's Journal, in an article translated from the *Bibliothèque Universelle*, is given the results of some experiments performed by the celebrated agriculturist Dr. Dombasle for determining the relative nutritive value of the aliments of sheep and cattle. An abstract of the article is here given.

Forty-nine sheep were divided into seven lots, of seven sheep each, in such a manner that the total weight of each lot should be, as nearly as possible, equal to each of the rest. Each lot was kept in a separate division of the stable, the food was given to each lot in rations of equal weight, and by means of scales, the total weight of each lot was taken once a week, and the experiment was continued five weeks. The weight of each lot was four hundred and thirty-six pounds.

The substances subjected to examination were: 1. Dry lucerne. 2. Oil cake from flax seed. 3. Oats and barley. 4. Crude potatoes. 5. Cooked potatoes. 6. Beets. 7. Carrots.

One of the seven lots was fed exclusively on dry lucerne, of which fifteen pounds were found to be a proper ration of one sheep per week. Each of the

six others received just half the quantity of lucerne, or seven and a half pounds, and the remainder of the ration consisted of such a portion of the other alimentary substances, as was found sufficient by a careful weighing during the five weeks, to keep each lot in the same healthy condition. Of these substances, the following quantities were found to be equivalent in nutritive value to the half ration of lucerne.

Oil cake,	44 lbs.
Barley,	34 "
Oats,	5 "
Crude potatoes,	14 "
Cooked potatoes,	13 "
Beets,	16 "
Carrots,	23 "

The quantity of water drunk by each lot of sheep, measured by a gaged trough, during the five weeks, was as follows, showing the relative degree of thirst occasioned by the different aliments.

1st lot, 223 quarts.	5th lot, 108 quarts.
2d " 189 "	6th " 95 "
3d " 164 "	7th " 86 "
4th " 123 "	

Prices Current in New York, May 25.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 12 a 15; Upland, 11 a 13; Alabama, 11 a 14. Cotton Bagging, Hemp, yd., 13 a 24; Flax, 11 a 15. Flour, American, 8 1/2 a 9. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13 00 a —. Flour, N. York, bbl. 5.56 a 5.62; Canal, 5.50 a 5.65; Balt. How'd st. 5.75 a 5.87; Rhd city mills, — a —; country, 5.62 a 5.75; Alexandria, 5.62 a 5.75; Fredericksburg, 5.62 a —; Petersburg, 5.62 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir., — a —; Rye, North, .76 a .78; Corn, Yel. North, .73 a .75; Barley, — a —; Oats, South and North, .43 a .45; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, 7 1/2 a 9.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals, viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1 1/2 " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.
Amer. Far. Office.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale. Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life.) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,
Amer. Farmer Establishment.

Ap. 26—tf.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1832, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13 1/4 and the other 13 1/2 hands high, and will yet grow three or four inches: their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to I. I. Hitchcock, American Farmer establishment, Baltimore. The price is \$600 each.

TO VINE DRESSERS.

The Subscriber wishing, to engage a Vine Dresser to take charge of a flourishing and fruitful Vineyard, offers the most favorable terms to a person who can furnish testimonials of a good character.

For particulars apply to I. I. HITCHCOCK, American Farmer Establishment, or to the undersigned by letter, addressed to Brown's Mills, Mullin Co. Penn. May 24. tf. JOSEPH HENDERSON.

CHOICE MERCER POTATOES FOR SALE.

I can furnish a small quantity of Mercer Potatoes of superior quality for seed, at 75 cents per bushel.

I. I. HITCHCOCK,
American Farmer Office and Seed Store.

TO FARMERS

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

HARVEST TOOLS, WHEAT FANS, &c. SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Scythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 doz. Hay and Manure FORKS.

30 doz. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, bung ready for use.

SICKLES, English and American Seythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them. May 24.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is very little variation in the price of any article from our last quotations. Wheat is the only article that has varied, a slight decline having taken place in it. The wagon price of Howard street flour continues at \$5 25 a 5 37 1/2.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do, ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 6.00 a 20.00.—Line yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Bappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 635 hlds. Md.; 188 hlds. Ohio; and 6 hlds. Ken.—total 829 hlds.

FLOUR.—best white wheat family, \$6.75 a 7.25; super Howard-street, 5.50 a 5.62 1/2; city mills, 5.75 a —; city mills extra 6.00 a —.—CORN MEAL bbl 3 62 1/2.—GRAIN, best red wheat, 1.17 a 1.22; white do 1.26 a 1.30; —CORN, white, 62 a 63; yellow, 63 a 64; —Rye, 70 a 72 —OATS, 37 1/2 a 41 —BEANS, 75 a 80 —PEAS, 65 a 70 —CLOVER SEED 8.00 a ——TIMOTHY, — a ——ORCHARD GRASS 3.00 a ——Tall Meadow Oat Grass 2.00 a 2.50.—Herd's, — a ——Lucerne — a 37 1/2 lb —BARLEY, —FRANSE 1.50 a 1.62 —CUTTER No. 11 a 13—LON, 12 a 14—Alab 11 1/2 a 13—Tenn. 11 1/2; N. Car. 11 1/2 a 12 1/2; Upland 12 a 13 1/2—WHEATRY hlds, 1st cl. 29 a; —in bbls 31 a 32.—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 35 a 42; three quarters do, 33 a 38; half do, 30 a 33; quarter do, 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do, 20 a 22; half do, 18 a 20; quarter do 16 a 18; common, 16 a 18. HEMP, Russian, 10, 195 a 205. Country dew-rotted 6 a 7c. lb. water-rotted 7 a 8c —Feathers, 37 a 37 1/2.—Plaster Paris, per ton, 4 1/2 a 4 25 ground 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50 —Oak wood, 2.50 a 2.75; Hickory, 4.00 a 4.50; Pine, 2.00.

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GENERAL

Agricultural and Horticultural Establishment; COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

✂ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

✂ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. I. Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

AGRICULTURE.

DEEP PLOUGHING.

The following article from the Maine Farmer, will be read with interest, as the propriety of deep ploughing is discussed with considerable ability. Both parties to the discussion evidently understand the subject practically, and the arguments of each would seem to be conclusive. Yet (if we may be permitted to interfere in the controversy) we think that the theory of each may be modified, and thus made to meet the ideas of both. We would suggest the modification as follows: We think that deep ploughing is generally injurious; also that shallow ploughing is equally so. Deep ploughing buries the nutritive matter of the soil so deep that the sun and air cannot act upon it, and its virtues are, therefore, lost to the crop, till a subsequent deep ploughing brings it again to the surface. It also buries the seeds of weeds, &c. so deep that they cannot vegetate till returned to the surface by a subsequent deep ploughing, and are thus perpetuated in the soil, instead of being destroyed by cultivation. Shallow ploughing secures to the crop the nutritive matter of the soil, but at the same time keeps the roots of vegetables so near the surface that they are injuriously affected by both droughts and excessive moisture. We think both theories, therefore, wrong, but capable of modification, so as to make the merits of each available, and to enable us to avoid the evils of each, by the adoption of *substratum ploughing*, as suggested by Gideon Davis, of the District of Columbia. This mode of ploughing is as follows: A small plough, that shall run four inches deep, is followed by a substratum plough, which breaks and loosens the ground six or eight inches deeper, but without turning the soil. By this means the ground is loosened twelve inches deep, and made pervious to water, and to the tap roots of the crop, while, at the same time, the nutritive portions of the soil, the seeds of weeds, &c. are kept near the surface; thus the former is available to the crop, and the latter vegetate, and are within the reach of the cultivator. By the filtering of the water through the surface soil, a portion of the fertilizing salts is carried down, and very soon the whole depth of the ground broken by the substratum plough, becomes charged with nutritive matter. This, we think, is the true theory, and many arguments might be brought forward to illustrate it; among them may be adduced the proposition, that ground thus ploughed will withstand any degree of drought.

As to the question whether the roots of vegetables descend deeply into the ground, that depends upon circumstances. All young seedling trees send down their tap roots to a depth proportioned to that of the loosened and fertile soil. We have often taken up young mulberry trees, whose tap roots had descended two feet, and were as long as the trees were above ground; but when the trees grow on a thin soil that had not been loosened deeply, they were but a few inches in length, and were well supplied with lateral roots. When the ground is loosened deeply, it becomes warmer than when merely stirred superficially, and thus, we think, affords nourishment from a greater depth, and consequently the tap roots of vegetables are induced to descend deeper. It is well known that beets, carrots, parsnips, salsify, clover, lucerne, &c. will send their roots as deep as the warm, well loosened rich soil extends. We have seen parsnips three feet long, and this is not an uncommon thing on deep, warm, loose soils; but on a thin soil—a soil unbroken below a depth of six inches—these same roots would not be over six inches in length.

It seems to us, therefore, that the ground should always be *ploughed shallow*, as a "Pupil" says it should; but that the shallow plough should be followed by a substratum plough, to break and loosen the ground to a good depth—and thus the views of the

editor of the Maine Farmer will be met; and thus the ideas of both parties will be reconciled.

As this is a subject of great importance to farmers every where, we hope our friends, the editor of the Maine Farmer and his correspondent, will excuse this interference in their discussion. We hope to see more on the subject from both their pens.—*Editor American Farmer.*

MR. HOLMES:

Sir,—A few more ideas on ploughing. I consider the subject we are discussing one of vital importance to the agricultural interests; therefore, I am disposed to give your arguments all the weight to which they are entitled. When adverted to by me, I hope I shall treat my instructor with great personal urbanity, and not pervert a single idea that you bring to view. As to the latter of these rules, I apprehend you did not so fully adhere to it, as I presume you meant to do in your remarks, because you say, "I deny that vegetables or their roots run down perpendicularly into the earth, in search of nourishment."—Sir, nothing was farther from my mind, or what I wrote in my first communication on the subject—"True I observed that most vegetables run much farther in a horizontal, than in a perpendicular direction into the earth; and that their roots do not strike into the earth in a perpendicular one. I gave my reasons why it was so, which were, that they might be benefitted by the rays of the sun or heat, dews, showers, air, &c. Nor have I discovered any thing in your remarks on my ideas to counteract them."

All that I objected to against your deep ploughing was, that it appeared that you urged it beyond where vegetables generally (except parsnips, beets, and I add ruta baga, and some other vegetables) went after food or nourishment; but I said to you expressly if you ploughed no deeper than the vegetables you were desirous of planting or sowing descended in a perpendicular direction after nourishment, we were agreed. I named maize as extending its roots much further in a horizontal than a perpendicular direction into the earth, but that it did descend even as far as the roots would be benefitted by the heat, air, dews, &c. no one ever thought of denying. I like your comparison that corn is similar to a tree. The roots of a tree do not strike deep in a downward course into the earth. No, not one ever so old, though you seem to think that corn would if it were not an annual. Here then, we have our argument in a nutshell, as the saying is. I should like to see you dig a deep hole, say six feet deep, and set a young tree out in it, placing the roots four feet under ground, and I say your tree would be ruined, for the very reason, that even trees cannot thrive and grow deep under ground with their roots out of the reach of the influence of heat, moisture, &c. No, sir, the order of nature is against your deep under ground notions. You say if I will travel with you some score of miles, you will show me grass roots three feet deep in an interval bank, which bank (no doubt) was formed by the water from time to time, carrying on various kinds of matter over the roots of the grass in the said bank from which they could not extricate themselves. This no more proves any thing against my position, than it would prove that a man lived that distance under ground because some unfortunate one was found there, buried by accident. I should apprehend this a poor object for such a journey. Forest trees verify my reasoning. Whoever found the roots of such trees very deep in the ground, compared with their horizontal directions? As to your remarks on my views relative to potatoes not doing well if hoed three times with a billock of loam raised around them, I confess I was a little surprised to learn, that the result I named was produced by injury to the roots, in after hoeing them, which do not extend far; and more was I astonished to find that a farmer should call it "theory" for one to assert that potatoes would not prosper deep under ground, even if placed there at planting, and not disturbed afterwards until dug up

in autumn. What is theory? Is it theory whether there is such an animal as man upon earth or not? I presume you will give a negative answer to this question; yet I should as soon have expected an affirmative, as for any one to say that he who asserts that potatoes will not prosper well very deep in the ground is theorizing. Why, sir, the fact has been tried by almost every observing farmer in the world, thousands and ten thousands of times, and there has been but one result, and that is, they will not, if down out of the reach of air, dew, showers, &c.

Now, as to your author, Mr. Powel, I remark, that I respect him as a veteran in agriculture, and yet he may be deceived, not being an oracle. I have before read his piece on deep ploughing, which you was good enough to quote; and then, as now, supposed that he was deceived in some degree as to the cause of the great increase of his crops from year to year, when he ascribes it to deep ploughing. I believe it was more owing to his very heavily manuring from year to year, with so powerful and lasting an ingredient as oyster shell lime. He gives us an account of a very superior crop of mangel wurzel, which I should say might be benefitted by pretty deep ploughing, being a tap root vegetable. And now, sir, I will name a few facts which took place among farmers the last short and cool season. The farmer who manured largely and then ploughed it in deep (as you directed) on sward land, thereby lost his crop of corn, it was so long extending its roots through the sward before it felt the manure, fermenting vegetables, &c. that were buried, that the frost which came early in autumn destroyed it. Not so with mine. Although I could not, owing to the season and kind of land, plant until the 6th of June, yet I had, at least, at the rate of forty bushels to the acre of ripe corn, pumpkins, &c. I took care not to have my manure, and what grass had grown, turned in deep; of course, the roots of the corn were very soon among them, and my corn came forward and got ripe before it was overtaken by the early frost. This is the result of your theory and mine. I now cease to trouble you, or the public any more with my notions about ploughing, as I believe that I have made myself understood in my broken way, after observing that very deep and very shoal ploughing are the two extremes, and that I believe the middle way much the best. Yours, &c. PUPIL.

P. S. I should like to know if you really believe that manure is found deeper in the earth than you send the point of the plough, or in other words, does it go down, or is it exhausted by crops, evaporation, exhalations, &c. An answer to this may settle the question. How you make a soil rich, lower than you can get the point of the plough, for I believe nothing of "the frosts of winter, the rains of Heaven," or any other thing carrying it down further than it is deposited by the cultivator. This, however, is easily tried by taking earth from under a compost heap, and earth not under one, and testing it by a chemical process, and I add, it has been proved in that way, not however consistent with your views, if I rightly understand them.

REMARKS BY THE EDITOR OF THE MAINE FARMER.—We are sorry that our correspondent should think that we perverted any of his ideas, or misquoted him. We have too much respect for one who has so long stood in the front rank in the contest (and it has been no small one) between prejudice on the one hand, and agricultural improvement on the other.

He complains that we perverted his ideas, by stating that he said, that "the roots of vegetables would not run down perpendicularly in search of nourishment." His words are: "your error consists in supposing that you can, by deep ploughing, excite the roots of vegetables to go down in a perpendicular direction to a great extent." And again, he says, "if you mean by that, (deep ploughing,) only so deep as the plants are wont to go in search of nourishment in a perpendicular course, I agree with you. But if you go deeper than that with your plough,

&c. I do not agree with you." Now certainly, he conveys the idea in the above quotations, that vegetables will not strike their roots downward any deeper than ordinary ploughing, for he expressly says, "if you go deeper than that with your plough (that is, deeper than the roots can strike.) I do not agree with you." The same idea, if we mistake not his meaning, is given in the communication above, and he adds that "the roots of a tree do not strike deep in a downward course into the earth; no, not one ever so old." We know not how far he would call "deep" or "to a great extent;" but we have within a week past, set out some trees, the tap root of which was over a foot and a half in length. We have dug up some of the white mulberry trees planted a year ago, in a soil which we purposely spaded very deep, the tap roots of which are over a foot in length. But these he will say are young. We will cite him to an old one. We have been credibly informed by an eye witness, when that what is now called the Factory boarding house, in this village was repaired, it was found that the roots of a Lombardy poplar, which grew near it, had extended downward, plunged under the bottom of the cellar wall, and was busily engaged in undermining or destroying the foundation of the arch upon which the chimney rested. That the roots of plants extended further, much further in a horizontal direction than in a perpendicular, we never denied, but that they would extend down much farther than they do, if farmers by ploughing and manuring would make the soil deeper than they do, we have not a shadow of doubt. In answer to his digging a hole five or six feet deep, and setting out a tree that depth, we say that we never set a tree deeper, or but very little, if at all, deeper than it grew. But we pulverize the earth as deep as we can conveniently, that the roots may have a chance to extend down. The burying of the trunk and thereby killing the tree is no argument against giving the roots fair play.

As touching the potato, and our ideas upon them which surprised our friend so much: he is evidently mistaken in thinking that we doubt the fact, that little ones would be produced by frequent hoeing and hilling. We did not deny, or did not intend to deny the fact. On the contrary we admitted it, and brought forth a different theory from his own to prove it. We did not call the fact theory, but we called his explanation of the fact theory, and do yet.

He asks if it is theory, that there is such an animal as man upon earth or not? We are not disposed to doubt the fact that there is actually such a being as man; but it has been doubted by older and wiser heads than either of ours. Many of the sages of olden time were sadly puzzled upon this subject, and the venerable, pious and worthy Bishop Berkley was in a huge quandary, whether man was a veritable substance, or merely a BUNDLE OF IDEAS. For ourselves, we are willing to take the reasoning of Descartes (if we mistake not) upon this subject,—"I think, therefore, I am"—as proof positive of our personal identity and existence. We grant the fact, that there is *BONA FIDE* such an animal as man; but how he came here—how he stays here—and how he gets away from here is theory, and theory like to be.

Passing from this, to his corn, he says that by shoal ploughing he raised a far better crop than his neighbors who ploughed deeper. Last year was an exception, we hope, to seasons in general. If he raised a better crop last year, on shoal ploughed land, his soil is not so deep thus, as is that of those who ploughed deeper. Besides did he not plant his corn on the margin of a pond? and did not the fog or vapor from the pond check the frost or take it out, and thereby save it, when his neighbor's crops which were further back, were killed? We have for several years, had corn planted in a situation where it was almost surrounded by a river. The fog from this body of water, invariably protects the corn, by extracting the frost gradually, while the crops on a warm sandy plain, a mile further back, are killed.

The idea advanced by us that manure will work down, troubles our correspondent. A friend once observed to us, that clay would dissolve gravel, because, said he, "I once put a large quantity upon my garden, which was a clay soil, and it has now disappeared, nor can I find it by spading the usual depth." On digging deeper, however, we found it. It was first buried by the usual spading. The frosts, rains &c. had buried it deeper than the point of the spade had usually been put. It may be objected to this, that manure is not so solid and heavy as sand and gravel. True, but a part of it will become dissolved of course by the rains, and by this means sink, and the dried fibre, if buried at the bottom of the furrow, must and will stand a chance to work down by the alternate rising and falling of the earth by frost.

The whole difference of opinion on the subject of ploughing must be settled by an answer to this simple question: Which is best, a shallow or a deep soil?

(From the Fredericksburg (Va.) Herald.)

ON RAISING POTATOES.

MR. HARROW:

In passing through our streets the other day, I could but observe the Irish potatoes, placed at the door of almost every house of business; on asking the price, I was told that one hundred bushels could be had at one shilling per bushel, and in lots of twenty bushels, at twenty cents per bushel. Now, sir, as we look for you to correct whatever goes amiss in domestic as well as political economy, would it not be kindly received by the readers of your paper, especially farmers, to give them a hint at the policy pursued by them, in the general neglect of this most valuable root. Its cultivation in the first place, is perhaps, of all others, the least difficult, as well as requiring the least labor—none possessing more nutriment, adapted to the constitution of both man and beast. It has its place upon the President's table as well as the cottager's, and is no less the choice vegetable of the delicate and blooming lady than the rustic ploughman.—The season for planting this invaluable article is near at hand, from the 1st June to the 15th or 20th July, for fall use, (in light and quick soils,) the time of laying by the corn is the time to plant them, in the last middle furrow, and the dirt gently thrown back upon them, they need no further cultivation, and have often yielded ten, fifteen and twenty bushels for one of seed. Again, the stubble of wheat is a fine preparation, a slight furrow and the potato placed in, and the dirt thrown back on each side, will, with the September rains, produce an abundant crop, without further cultivation, when the soil is light and active, and is found to be a great improver of the soil, yielding two crops in the season. Now, the uses of this famous root, beside that for the table, and as a substitute for bread, hogs, sheep, oxen, milch cows are very fond of them, and when boiled with a little salt and bran, nothing is more improving to their health and general good condition. Hogs, especially when in pens, fatten and grow more rapidly than with corn, always less liable to fever and costiveness. Would farmers pay a little attention to this article, they might largely increase the sale of their corn crop, which is often wasted without the improvement of their pork, except to harden the flesh. A simple calculation will easily show how it is that the eastern farmers make their little farms (not in all as large as one of our ordinary size-fields) produce so much. They calculate each acre in corn will produce 50 bushels—the same planted with potatoes, in laying by the corn, will produce from 250 to 250 bushels, according to the season. The first is worth, generally, 60 cents per bushel, is \$30 00 The latter, say 250 bushels, at 25 cents per bushel, though often more, is 62 50

This received from a single acre, \$92 50
In the same proportion, 20 acres will yield the sur-

prising amount, at ordinary prices, of \$1950. The lots in wheat about the same degree. Notwithstanding these almost certain results from such a system, we find our small farmers particularly, with, perhaps, a single horse to draw the plough, delve from year to year, at corn alone, and often before the 1st March have to look out to some kind neighbor to loan them a little corn for bread, to get on until fruit season. Not to say any thing about the smoke house, which, except in grass season, never has had introduced into it a single sty hog, a fat beef, mutton or pig. Why this? Ask the yankee. He will say, because you neglect the simple and easy culture of Irish potatoes.

Suppose, again, you take \$10 and purchase 50 bushels at the market price and plant them on the 1st July, or on the 15th, if you please, either in wheat stubble, or corn, ground—in the short period of ninety days you will gather your crop—at a moderate calculation you will get ten bushels for one of seed, making 500 bushels—which will sell for seldom less than 30 or 35 cents—take the least price and you have \$150 for the ten advanced for 90 days, and so in proportion, by the few days' labor of your least effective hands.

Who is it that has felt the ravages of the Hessian fly, and with hopes all blasted with regard to meeting promptly and at Christmas bonds for hires, &c. let him be up and doing while the season invites, and seed can be had, cultivate potatoes; who the last year had the last existence of his smoke house drawn out with sighs and groans and a useless dairy—let him plant potatoes; who labors to maintain his punctuality and is desirous to behold his helpmate cheerful, and his children happy—let him plant potatoes.

(From the Virginia Herald.)

A TIMELY HINT—CULTURE OF POTATOES.

Who that has a field of forty acres in corn or in wheat, with labor in proportion, and feels ambitious to vie with his neighbor who has sixty; let him cultivate potatoes—Then make his calculation by the good old rule of three, viz:

If 1 acre give \$92	what will 20 give?	Ans. \$1840.00
If 20 " " 1840	" " 40 " "	3680 00
If 40 " " 3680	" " 60 " "	4906.67

\$10426.67

Now, sir, contrast this with the short-sighted policy of corn and wheat alone; take the first, as it generally yields most, and apply the same good old rule, viz:

If one acre give 50 bushels at 60 cents	what will 20 give?	Ans. \$600.00
If 20 acres give 5600, what will 40 give?	" " 40 " "	\$1200.00
If 40 acres " \$1200, what will 60 give?	" " 60 " "	\$1800.00

\$3600.00

Total loss by neglecting to cultivate potatoes, \$6826.67

You will observe this calculation is founded upon the largest scale in favor of the corn, as to product as well as price, say 60 cents per bushel, and the smallest against potatoes, yet 200 per cent. is gained by them. I might here give a hint at the present state of the meat market, the scarcity, poor quality and high prices, &c. and advert to the amount annually sent out of the state for pork and potatoes, and show the amount of tribute we pay annually, by neglecting the cultivation of Irish potatoes. Under these fair prospects can it be possible that farmers will hold on upon the old impoverishing policy, and close their eyes and ears against these calculations, till the season glides by, and suffer the fine lots now in market to spoil upon the merchant's hands, and say next fall, the fly, rust, grub worm, &c. &c., ruined their crop, and they can't pay their accounts till next year? No, no—advise them to look to it, and plant potatoes, or they will be left without excuse.

A SUBSCRIBER.

(From the Maine Farmer.)

RAISING PEAS FOR SWINE, &c.

MR. HOLMES: *Winthrop, April 17, 1833.*

In the year 1805, I purchased the farm where I now live, on which there was not more than four and a half tons of hay cut the first year I improved it, although there were many acres mowed over. I ploughed the spear grass sward, and put on one and a half bushels of plaster per acre, and sowed to peas, and peas and oats. I had the Newbury white breed of hogs. I turned them into the peas when in the milk, or rather a little before, when they were so tender that the hogs would eat pods and all.

I kept them in these, by fencing a small enclosure, until all the peas were eaten; then moved the fence to a fresh portion. Two boards in height were sufficient for that breed. By two or three sowings I was enabled to feed them in this way during August and September.

I then mowed my peas and oats, and while they were becoming sufficiently dry to thrash, I picked the pods from those stakes which had the most upon them, and gave them to my hogs in the yard, and when Indian corn was harvested, I gave them the small corn. Immediately after harvesting Indian corn, I threshed my peas and oats, and had them ground, set a half hoghead on the south side of the house and mixed up a quantity of the meal for the hogs, adding steamed or boiled potatoes, taking care not to let the mixture sour, but to get into a raised or slightly fermenting state. The course adopted by me of turning the hogs into the peas, often occasioned some mistakes, for many a time would some kind good hearted person call and tell me very earnestly, that *the hogs were in the peas*.

I relied upon the sale of pork to pay a hired hand, and did it for a number of years.

I afterwards came into the possession of another farm, from which I brought the hay and spent it on the one where I lived. I was thus enabled to manure highly, my peas ran to vines, and I gave up the raising of them for other crops. I am now about ploughing a back field and introducing the same mode of culture, it being too much labor to cart the manure to it. I was probably the first who introduced this kind of culture in the county, and I suffered from ignorance, as to the quantity of seed necessary to be used. I have now eight bushels of peas to sow this year, and shall sow them in the following manner; of those that are intended to be eaten off, I shall sow one and a half bushel of peas and a half bushel of oats, (the oats well incorporated or mixed with the peas to hold them up when growing.)

If intended to be cut as peas and oats, I shall sow five pecks of peas and a bushel of oats; more peas ought to be sowed than oats, for the oats will gain on the peas. I find that the peas and oats ought to be raised together for a number of years that they might ripen at the same time. I consider the pea and oat crop as the most convenient and valuable crop that I can raise; as food for hogs and horses it surely is the first. With respect, yours, E. Wood.

(From the Kennebec Farmer.)

CULTURE OF THE RUTA BAGA.

MR. HOLMES: *Monmouth, Feb. 4, 1833.*

Josiah Richardson, Esq. of this town, has raised the last season, on a small piece of ground at the rate of eight hundred bushels of ruta baga to the acre, (after being closely cut,) but as the ground on which they were raised was not sufficiently large to obtain a premium, he did not present a claim for that purpose, to the Agricultural Society. The same person a few years since raised from a small piece of adjoining land, at the rate of two thousand one hundred and odd bushels of carrots to the acre. The ruta baga were raised on land turned over in May which had never before been ploughed. They were sowed the 22d day of June, and when harvested, some measured two feet five and a half inches in circumference.

A FRIEND TO FARMERS.

HORTICULTURE.

(From the London Gardener's Magazine.)

ON THE MEANS OF PROLONGING THE DURATION OF VALUABLE VARIETIES OF FRUITS. By THOMAS A. KNIGHT, Esq. F. R. S. President. Read May 3, 1831.

Mr. Knight believes that all the constitutional properties of every variety of fruit are contemporaneously inherent in all the plants which can be made from the buds of that variety, if taken as they usually are from the branches, be the mode of multiplying the buds of these branches into plants what it may. No trees of any variety can be made to produce blossoms or fruit, till the original tree of that variety has attained its age of puberty; and under our ordinary modes of propagation by grafts and buds, all [the individual plants of any given variety, as we understand it] become subject, within no very distant period, to the debilities and diseases of old age. It is therefore desirable that the planter should know at what periods of their existence varieties of fruits are most productive and eligible; and by what means (if any exist) the deterioration of valuable varieties may be prevented or retarded." Mr. Knight has been accustomed to consider "that each variety possessed its greatest value in its middle age," but now believes, "that in vegetable as in animal life, the most prolific period is that which immediately succeeds the age of puberty." Out of a good many experiments which led Mr. Knight to this conclusion were these:—From seedling pear trees twenty years of age, and which had borne their first fruit in the preceding autumn, he, in July, 1828, took from the extremity of their leading branches buds, and inserted them into seedling pear stocks, then only four months old. Many of these budded plants, although not transplanted, nor subjected to any peculiar mode of treatment, produced blossoms abundantly vigorous in the spring of 1831, and consequently at but three years from the date of their springing from the ground. Mr. Knight remarks:—"I never previously saw, and I do not think that any other person has seen, in this climate, fruit produced by pear trees at so early an age. I had previously made the same experiment with apple trees, with the same results." Mr. Knight laid some branches of a plum tree, which had not attained the age of puberty, which (as he expected) freely emitted roots; but he found, contrary to his expectation, that the young shoots which these layers had produced afforded, in the following spring, much blossom. The variety of plum experimented on, Mr. Knight believes to be one exceedingly productive of blossoms; "but," he adds, "I doubt much if such blossoms would have appeared, if the variety had been a century old." Thus, while Mr. Knight hence infers that grafts or seeds taken from the bearing branches of very young seedling trees afford trees capable of bearing freely at a very early age, and, in

consequence of their youthfulness, likely to continue to grow with health and vigor; yet he readily admits that this information will not subserve the object of prolonging the duration of existing varieties of fruits, if every part of seedling trees is in the same degree affected by age. This, however, Mr. Knight states, is not the case; for "the decay of the powers of life in the roots of seedling trees is exceedingly slow, comparatively with [the decay of the powers of life in] the bearing branches. Scions [shoots] obtained from the roots of pear trees of two hundred years old afford grafts which grow with great vigor, and which, in many cases, are covered with thorns, like young seedling stocks; whilst other grafts, taken at the same time from the extremities of the branches of such trees, present a totally different character, and a very slow and unhealthy growth. I do not, however, conceive that any scion [shoots] which thus springs from the root of an old tree possesses all the powers of a young seedling tree; but it certainly possesses no inconsiderable portion of such powers; and I have proved such scions to be capable of affording healthy trees of a considerable size.

"If grafts or buds were taken from such scions [shoots] on their first emission, [from the roots,] much time would elapse before any blossom would be produced; but, if buds were not taken from such scions [shoots] till the branches attained the age of puberty, no loss of time whatever would subsequently occur.

"The branches of the plum tree, in the experiment above mentioned, emitted roots just at the period when they had attained the age of puberty; and I do not doubt but that scions [shoots] from the roots of these will spring from the soil, in full possession of all the powers attached to the branches from which they derived their existence. My own experience leads me to think that trees of the pear, the apple, and the plum may be better raised by layers and cuttings of the roots, than by the methods usually practised, and at a less expense."

Mr. Knight remarks, in conclusion, that the permanent preservation of valuable and new varieties of fruits, of which the society's garden contains many, in their pristine and present state of health and vigor, appears to be an object of great importance; as does the retardation of the decay of many varieties, "such as the Cornish gilliflower apple, which, in my estimation, is and always was without a rival in the climate of England."

(From the Genesee Farmer.)

NEW AND DESIRABLE FLOWER GARDEN PLANTS.

"The following plants we would particularly recommend as deserving a place in every good flower garden, viz:—1, *Salvia cardinalis*; 2, *Fuchsia melandris*; 3, *Feenimocarpus scaber*; 4, *Lophospermum scandens*, *Salpiglossus*, all the species; the newly introduced [species of] *Penstemon*, *Lupinus*; 5, *Calceolaria*, *Potentilla*, *Gemm coccineum*, *Gemm Quillyon*; 12, *Mammadia Barcliana*, *Mimulus moschatus*, &c.

"Of these, the third, fourth, and twelfth, are climbing plants, and suited for training against walls, pales, or rustic supports. They should be propagated by cuttings in autumn, and kept in pots in the green house during winter, and planted out in April or May. The first, second, and eighth, average two feet in height, and require the same protection. The remainder are sufficiently hardy to stand in the open borders. Of the genus *Lupinus*, several are annuals, and should be raised from seed in the spring. *Salpiglossus picta*, *atropurpurea*, *stanina*, and *Barcliana*, are hardy biennials or perennials and may be propagated from seeds which should be sown in April and May."—*Mintosh's (British) Flora and Pomona*.

REMARKS BY A CORRESPONDENT.—The following particulars respecting some of those plants, are selected from the same work. It has been gratifying to observe that seeds of many of the kinds recommended, are now on sale for the first time in this country, by

PROCURING TWO CROPS OF THE ASH-LEAVED KIDNEY POTATO, IN ONE YEAR OFF THE SAME GROUND.—In each of the last two years I have grown two crops of the ash leaved kidney potato on the same ground, and each of the crops has been a good one. I proceed thus:—In taking up the first crop, I bury the tops or herbage in the trench, by turning the earth between the rows upon them, and this done, the ground is ready to be planted again. My first crop this year was planted on the 30th of March, and my second on the 12th of July; the second has been as good as the first, and the potatoes are perfectly ripened; the joint produce of the two crops has been fully at the rate of nine hundred and sixty bushels an acre. I took some of the potatoes of the second crop, of nearly the full size, to market on 15th September.—*Loudon's Mag.*

ALEXANDER GORDON, at the Rochester Nursery, New York. I hope our florists will take advantage of this opportunity to embellish their gardens.

Calceolaria corymbosa has yellow flowers, delicately striped near the orifice with red, and dotted with the same bright color in other parts. It is a native of Chili; grows from one to two feet high; flowers from April to August; and thrives in peat and loam. It is a biennial, and may be propagated by seeds or by dividing the roots.

The temperate regions of Chili and Peru are said to abound in many splendid species of this genus.—The prevailing color is yellow. They are all readily increased either by seeds or cuttings; and most of them are well calculated for planting out in the borders of the flower garden during the summer months. As green house plants, they are all peculiarly interesting, and cannot fail of obtaining admission into every collection where there is the least pretension to a taste for plants.

Ecrenocarpus scabra, also called *Calampelis scabra*, is a native of South America. The flowers are somewhat tubular, finely shaded with red and yellow, and grow in racemes. The plant is a half shrubby perennial, growing from six to twenty feet high, and flowering from July to October.

It is a rapid growing plant, which in its native country is found running over the hedges and bushes, and flowering nearly the whole year. It is propagated by seeds which are produced in tolerable abundance, but do not vegetate sometimes till the second year after sowing.

Goum coriucum is supposed to be a native of Chili. It grows from one to two feet high, with scarlet flowers in June and July. The native country of this extremely beautiful plant, is not correctly known. It is of the easiest culture, seeding abundantly and increasing at the roots. Perennial.

Verbena melindris is a native of Chili and Buenos Ayres, grows six or eight inches high, and flowers from June to September. It is perennial; and propagated from cuttings. The flowers bright scarlet, arranged into a corymbous spike.

This, of all the genus is the most splendid, and the most deserving the attention of the flower gardener. The facility with which it is increased by cuttings; and naturally when planted out, by rooting from the prostrate stems, has already rendered it common in all the best gardens in the vicinity of London. For the decoration of the green-house, conservatory, and drawing room, few dwarf growing plants can exceed it; and although it requires the protection of a frame during winter, it is among the greatest acquisitions that the flower garden has recently received.

Lophospermum scandens, called also *Besleria scandens* is from Mexico. It is perennial; grows from five to twenty feet high, with flowers varying from purple to a rose color, which appear from July to October. It is propagated by seeds or young cuttings.

As a green-house, or conservatory climber, this plant has few equals; and to the list of flower garden climbers, it also adds a valuable addition.

Maurandia barclata is also from Mexico, grows from seeds and cuttings, four to ten feet high, and flowers from May to December. Corolla nearly three inches long, deep purple, tubular-bell shape. For green-house and conservatory climbers, they are admirably adapted, being rapid in their growth, and continuing long in flower. During the summer months they may be planted out in beds in the flower garden, or trained to trellises with advantage. It is perennial.

Lupinus. So late as 1826, we find only fifteen species of this genus enumerated in Sweet's Hortus Britannicus, as being in cultivation; but in the course of the following year, an additional fourteen new and valuable species, was made to this list by the indefatigable exertions of Mr. David Douglas, a botanical collector, employed by the Horticultural Society of London, in exploring the rich vegetation of the almost un-

trodden territories in the vicinity of the river Columbia, in the northwestern districts of North America.

Professor Nuttall says in his introduction, "the trees and shrubs of cold climates retain the necessary moisture of their vitality at temperatures when all other liquids freeze." p. 223.

If by this moisture is meant the sap, the passage is erroneous. There is not a winter of the Genesee country in which the sap of the maple, the beech, and the basswood is not frozen very hard; and the labor of cutting wood at such a time is very much increased, as every farmer who cuts his own fire-wood well knows. Nor can it be said that it is different with evergreens: the hemlock (*Pinus canadensis*) for instance, freezes as hard as the basswood.

A PRACTICAL GARDENER.

(From the New England Farmer.)

SEEDS FROM COM. PORTER.

Proceedings of the Massachusetts Horticultural Society, at a meeting held in the Hall of the Institution, on Saturday, the 18th of May, 1833.

H. A. S. Dearborn, the President of the Society, made the following Report:—

It will be recollected, that during the last season, a communication was received from DAVID PORTER, Esq. Charge D'Affairs of the United States, at the Ottoman Porte, in which he kindly proffered his services, in procuring and transmitting such seeds and plants as the society might be desirous of possessing. Having so favorable an opportunity to increase the varieties of our fruit, timber, and ornamental trees, and culinary vegetables, I wrote him last autumn, that it would be considered a great favor, if he could obtain and forward seeds of the Gul Ibrischim,—samples of the grapevines, cherries and other fruits of the Crimea,—seeds of such forest trees as were considered valuable for economical purposes, and of such other plants as would flourish in our climate.—Within a few days the following letter has been received, with the seeds therein named.

Pera, Jan. 3, 1833.

SIR,—I have received your favor of the 25th Sept. 1832, accompanied by a diploma, with which the society over which you preside, has honored me as corresponding member. Also a number of the New England Farmer, noticing my communication respecting the beautiful Gual Aghadj.

As the name of H. E. the Baron Ottenfels is mentioned in that communication, I took the liberty of sending it to him, and he did me the honor to call on me the next day, bringing with him a quantity of the seeds of the tree to which the communication alludes, as growing in his garden; he had collected them for the purpose of taking with him to Vienna, for which place he takes his departure from here in a few days.

These seeds, which are fresh from the tree, he desired me to present in his name to the society. They are not exactly the kind which I sent to Mr. Skinner, but a variety of the same family, and I am in hopes may prove still more beautiful. The Baron calls the tree the Gul (Gual) Ibrischim, the seeds are larger and blacker than those of the Gual Aghadj. The pod is nearly double the size. Gual, as I mentioned in my former communication, is the Turkish for rose. Ibrischim as nearly as I can ascertain means silk tassel. The silk tassel rose is certainly a most appropriate name for it. Yet I should be sorry that it should lose the name which it bears in Turkish.

A few of the seeds I shall put up in this letter, the remainder I shall put up in a clean tin box, and let it take its chance with the hope of reaching you.

The north will be able to exchange with the south; and it is worth making the exchange, for there cannot be a doubt that they are varieties. If one of each comes to maturity, I shall feel myself well rewarded in the satisfaction of having introduced so beautiful an object into our gardens. It is a hardy plant, it flourishes here in forty-one degrees, but it is not so

cold as in the same latitude in America, yet I have no doubt it will thrive in Massachusetts.

I have endeavored in vain to find the plana you mention, or to get some intelligence respecting it.—Mr. Eckford, could give me no information about it, nor could Mr. Rhoades, his farmer, who is something of a botanist. Both, however, assured me that they had the live oak here equal to that in the United States, and they have shown me several fine trees of it growing. The Turks are ignorant of the treasure they possess. Their timber for ship building is, take it altogether, the finest in the world. I have never seen such fine lots of wood, for the frames of ships, as I have seen delivered from vessels at the Navy Yard, not cut exactly to mold, but nearly so. It is brought chiefly from the Black Sea. Immense rafts of pines pars are annually brought down from thence to Constantinople.

A long spell of sickness, the prevalence of the plague, and various other causes, have prevented my being as active as I should have otherwise been, but the prospect of a return of health encourages the hope, that next spring and summer, I shall be able to accomplish all the wishes of the society as expressed in your letter. With great respect, your most obedient servant,

DAVID PORTER.

To the President of the Mass. Hor. Soc. Boston.

(From the Genesee Farmer.)

QUINCE TREES.

MESSES. EDITORS:

In the Genesee Farmer, I noticed an article on the subject of injury, and final destruction, of quince trees by worms. For the benefit of your correspondent and all others concerned in cultivating the quince, I will give the result of actual experiment.

In the spring of 1823, I procured some trees of the orange or apple quince, and set them in rather moist, rich soil. They all lived, and as they were of a good size, soon commenced bearing. I saw an article in some work, recommending coal dust, or the dirt from the bottom of a coal pit, to be put around quince tree. I tried the experiment, and it succeeded equal to my most sanguine expectations. While my trees were doing well, a neighbor suggested the plan of manuring trees, and (like the man who was well, but took medicine to be better) I manured my trees, but not long after discovered worms or grubs in them, near the top of the ground, and in cutting them out, injured the trees so much that they all died but one, and that is a poor sickly one.

The next year, 1824, I set other quinces of the same sort, and have kept the coal dust around them altogether, and the result is, the trees are uncommonly thrifty, good bearers, produce very large and fair fruit, and I have seen no appearance of the grub.—My plan is to renew the dirt, say once in two years, first scraping away the old dirt, and putting on a bushel or two of fresh. Yours, &c.

C. OF STARKEY.

RURAL ECONOMY.

(From the Southern Agriculturist.)

ON THE MAKING OF RASPBERRY AND STRAWBERRY CORDIALS, CIDER AND WINE; a' so, observations on the growing of Sugar Cane, in the lower part of South Carolina.

St. Matthew's Parish, November 1, 1832.

One gallon of raspberries or strawberries when properly mashed, squeezed, and the juice mixed with the requisite quantity of water, sugar and brandy, will make one and a half gallons of rich beautiful cordial, having all the good qualities of madena wine. There is no loss in adding sugar to the fresh juice, as the quantity increased thereby, is of more value than the sweetening. Two years since last July, I made a barrel of permanent cordial, like cider, without brandy. I took the pure juice of the ripest apples, sweet-

ening it at the rate of half a pound of Muscovado sugar to the gallon, I took then an empty cask, and after fumigating it well with the smoke of brimstone, I poured into it through a strainer about three gallons of the juice, then fumigated it again with the brimstone smoke, what the cask could contain, closed the bung, rolled the barrel backwards and forwards for the purpose of impregnating the enclosed liquid with sulphurous fume; repeated the process of pouring in, tumbling and rolling, till the cask was filled, then bunged it up tight, placing it where it would be kept steady and free from perturbation, not meddling with it till Christmas, when I broached it, and better cider I never tasted. I never tried the experiment with any liquid but the juice of the apple: I expect the same process would succeed similarly with the juice of the grape or that of any other kind of fruit.

To convert the simple vinous juice of any fruit into an exhilarating salubrious cordial, without the admixture of other ingredients, is a great desideratum. This cannot be readily done, but by confining it in receptacles impervious to the atmosphere. The ancient Phenicians, it was thought, made the best wine in the world; and their method was to fashion a green beef hide, in the most suitable manner for making a portable receptacle—closed it with seams impervious to the air, filled it with the *must*, then put it where it could be kept cool and unmolesied. This, when complete, was called "a bottle of wine." The elastic quality of the green hide, renders it a useful substance for containing new wine, as it resists the impetus of its fermentation, which sometimes bursts glass, and forces the whizzing fume and liquid through the seams of the tightest casks. This, in my humble opinion, is the only method, by which good wine can be made in a warm climate, exclusive of artificial agency. And even this method was not always exempt from said agency, for the *must*, intended for the first rate quality of wine, was boiled, mixed with honey and spices, bottled in the largest kind of hides, rested on its lees till the commencement of the cold weather of the second winter; when it was carefully racked off into smaller bottles made mostly of the skins of sheep and goats. I expect this was the manner of making the celebrated nectar.

If fruit cider and wine are so estimable in a pecuniary point of view, they are more so as promoters of health, strength, and cheerfulness; as remedies for sickness and a preventative for many disorders. In the sickly districts of France and Germany, as I am credibly informed, the fever disappears at the approach of the vintage, although it is naturally the sickliest season of the year, and the failure of fruit there is considered as a two-fold public calamity: for besides the loss of the staple commodity, sickness, if not pestilence, is pretty sure to follow. But why cross the Atlantic for instances when there is a sufficiency at home? The cider districts of the maritime parts of New Jersey, Delaware, Maryland and Virginia, are naturally, perhaps, as sickly as any part of South Carolina; but fevers there abate at the approach of the cider season, and diminish in proportion as it advances until they entirely disappear. Many of the farmers in those states dread a failure of fruit as they would the failure of harvest; indeed, the fruit of many of their farms is their most valuable production, witness that of Mr. Jones, of New Jersey, (mentioned in one of your journals,) which produces annually about seven thousand dollars worth of peaches alone, setting aside the valuable produce of his other fine orchards of apples.

The all-wise Author of nature in order to overbalance evil with good, has bountifully granted some benefit which commonly more than compensates for the natural disadvantages peculiar to any state or country. Thus in febrile regions the soil and the climate are capable of producing the cure and preventive. I know of nothing that would contribute more to the comfort and advantage of the citizens of this state, than the rearing of fruit, the cultivation of the

sugar cane, and the valuable grasses, (such as the gama grass and the wild oats;) the encouraging the introduction of valuable exotics, and the promoting the cultivation of valuable plants. We already have to promote the rearing of stock of every kind, and to prepare for the total abandonment of the culture of cotton, except for domestic use. The quantity of fruit trees in this part of the state has greatly diminished since the commencement of the present century, owing to the emigration of the small planters whose plantations were mostly sold to great ones, who destroyed the orchards for the purpose of raising cotton on the ground where they stood, and to prevent the fruit being pilfered and carried off by the neighboring negroes, for in some places it is an aggravating misfortune for a person to have an orchard. I have had nearly half of my apples stolen and carried off in the night. Was every planter in the state obliged to plant an orchard of apple and peach trees, of the early and late kinds in proportion to the number of his slaves, say five trees of each, for every one of his negroes, it would, I think, be the happiest obligation that South Carolina was ever laid under.

When an agricultural article becomes a first rate staple, it seems difficult to abandon it, even when its culture proves to be entirely disadvantageous. The planters in the upper part of this state were a long time before they could be prevailed upon to substitute the rearing of cotton for that of tobacco, although the latter had become something worse than unprofitable, and they seem now to be similarly disposed, not in the upper parts only, but all over the state.

And the cotton planters appear to be determined to persevere in its culture, although they should get nothing but their labor for their pains. Since the invention of the labor-saving machines for ginning and manufacturing, there are few or no productions of agriculture that are and have been more estimable on account of their utility than cotton, and there are few or none that have ever been known to have outgrown their demand so rapidly, and so completely, as what cotton has done. It seems as if all mankind were concerned and combined in promoting its production.—Sixteen years ago there was no cotton exported from Virginia, Mississippi, Alabama nor Florida, and sixteen years ago, there was no cotton exported from Brazil, nor any of the South American states, nor from the East Indies, nor from Egypt; and these now are all great cotton growing and cotton exporting countries. Is it not then much more a matter of astonishment that cotton gets the price it does, than that it should be reduced to what it is?

I have reason to believe that the climate of the lower half of South Carolina is more favorable to the growth of sugar cane than that of Louisiana. Being situated southwest of the Alleghany mountains, which wafts or wards off the north wind, and as it were, guards vegetation from the fatal effects of the chilling northern blast, and of the early killing frosts of autumn till the snow covers the mountains, which seldom happens till after Christmas.

On the contrary, Louisiana is much exposed; although located several degrees south of the parallel of Charleston, yet her locality renders her much more northern than her latitude warrants. Situated near the mouth of one of the longest rivers in the world, which with its grand contributor, the Missouri, opens avenues to the frozen regions, from whence the northern winds having no obstruction to retard or bias them, descend upon her with unabating celerity, and often bring premature winter and extremely cold weather when least expected. The proximity of the Gulf of Mexico also facilitates the operations of old Boreas by its warm temperature and consequent rarefaction of the encompassing air, acts as a draft to the colder northern atmosphere, and brings down the breath of the frigid zone in a very short time.

I have read in a newspaper, (though in what paper I cannot now recollect,) that a captain of a vessel and his crew were frozen to death on Lake Ponchartrain,

on the night of January 19th, 1817. From a circumstance that took place in my family, I remember the day perfectly well, it was on a Saturday, and a very cold day, but not so cold as many a one we have had since. I frequently see accounts in the newspapers of the crops being injured in Louisiana, by early autumnal frosts. In the year 1830, the damage was immense, supposed to be more than half of the sugar crop, occasioned by unseasonable frosts that happened in October and November. In that year, with us, or in this neighborhood, there was no frost till the first of December, and that so light as not to injure vegetation.

Within a few years, in different parts of this district, I have seen several small patches of sugar cane, they all grew, thrived and matured beyond expectation; and I never knew a sugar cane to be injured by frost, previous to its being cut. Those that have been cut and put away for seed, have been injured by the cold; but the cause of that was ignorance of the right way of taking care of them. A SMALL PLANTER.

(From the New York Farmer.)

ABSORBENT PROPERTIES OF POTASH.—PLOUGHING IN DRY WEATHER.

MR. FLEET: *Middlesex, Feb. 15, 1833.*
I am not quite done with the subject of ploughing and hoeing in dry weather. From the remarks made on potash, vol. 5, page 321, of the Farmer, two things may be inferred; first that it takes fourteen pounds of water to dissolve one pound of potash, and consequently that it will take seven thousand pounds of water to dissolve an ordinary barrel of five hundred pounds of potash. This is the least quantity of water in which a barrel of potash can be dissolved. Many years ago, a boat was loaded on Cayuga lake with fifty-six barrels of potash. On the Oneida lake they met with a squall, were driven ashore and sunk. The potash barrels being leaky, and remaining in the water from half an hour to an hour and a half, took in as much water as they would contain. This water swelled the barrels so that they became tight. In this situation the captain procured two potash kettles with tubs, wood and other articles, with a view of dissolving, boiling down, and melting the whole of the fifty-six barrels. The circumstances being mentioned to me, I observed that the boiling would be unnecessary, as the potash in the barrels would soon absorb all the water, which could not exceed ten gallons to the barrel, and the potash would pass inspection without melting over, and consequently save the expense of boiling, melting, &c. The ten gallons of water could not weigh over ninety pounds, where as it would take seven thousand pounds to dissolve it.—The experiment was tried and the potash was sent to market for inspection, and was sold as *first sort*, so that the expense of boiling away three hundred and ninety-two thousand pounds of water, and all the other expenses of such an undertaking, were saved.

From this it will appear that it is not altogether useless to know how many pounds of water will dissolve one pound of potash. The atmosphere holds much moisture, or water dissolved in caloric, as is evident from the circumstance mentioned p. 321, vol. 5, of the Farmer. Another experiment will serve to demonstrate the same fact. Take a tumbler, fill it with cold water, set it on a table in warm weather, and in a few minutes the tumbler will be covered with a dew. This experiment is easily tried, and the rationale I take to be as follows:—Caloric always seeks an equilibrium; it passes through the tumbler, and combines with the cold water until the water is brought to the temperature of the air. The water held in solution is deposited on the outside of the tumbler, and this circumstance will occur in the driest weather. It would seem then demonstrated, that the atmosphere holds in solution much moisture, and though invisible to us it is still large in quantity. Now let us apply this doctrine to ploughing and hoe-

ing in dry weather. Where land is left unploughed, unhoed, and covered with grass and weeds, the crops are seen to dwindle; stir the ground, and they speedily revive. By ploughing and hoeing, the grass and weeds are destroyed, and the earth becomes a powerful absorbent, drawing the moisture of the atmosphere into the neighborhood of the plants. The capillary vessels of plants seize this moisture; it reaches the roots and sustains them in a flourishing condition, even in the driest weather. The moment this moisture is condensed, it can no longer enter the capillary vessels of plants. This probably carries with it much food and is every way necessary to the well being of the plants: so I think, and remain,

Yours, &c.

R. M. W.

(From the Maine Farmer.)

A MACHINE TO TURN HAY, GRASS AND POTATOES TO CASH.

MR. HOLMES:

May 1, 1833.

I fell in company, a few days since, with that distinguished and industrious farmer, Ariel Tinkham, of Anson, in the county of Somerset. He told me that he had discovered the above machine to turn the above articles into cash, and that he was not obliged to trust them to poor people and not get his pay.

The machine is this: he took a pair of steer calves, well mated, of the breed introduced into that country by Daniel Shaw, Esq. of Industry; suckled them, and after weaning kept them well until they were three years old, and from his description, I did not think there was any thing peculiar in their keeping until that time. The summer after they were three, he gave them the best feed, and we are to suppose it was good, as he is a good farmer, and has SEVEN HUNDRED acres of land in his farm (as I have been informed.)

The winter after they were three years old, he put them upon the best of hay, and gave them sixty bushels of boiled potatoes. Next spring he sold them for ONE HUNDRED AND FORTY DOLLARS, to a man who drove them to the Canada market.

They were the best of beef, and had never had a yoke upon them. I understood him that he was preparing to enter upon the business on a more extensive scale, and had no doubt as to the profit. The Canada market is not easily supplied, and I see no good reason why every farmer may not do the same, as there is no patent taken out, nor is the patent or copy-right secured. We calculated the cost of the steers, keep, &c. as hay sells there, setting the price of potatoes at twenty-five cents the bushel, and found that they cost him eighty-three dollars. If we can do so with our potatoes, we need not trouble ourselves about making potato starch or sugar to get the cash for them. I believe the potatoes might be cooked much easier by steam. It seems necessary that they should be of a large breed, and he said that he would have them as well shaped and mated as if he intended to work them. They were so managed as to arrive to maturity while young. Now is there not a saving in that? It is all practicable, for it has been done, and can be done again. The clear profit on these steers, if eighty-three dollars were the cost, is fifty-seven dollars.

E. J.

REMARKS BY THE EDITOR.—We remember having seen and examined Mr. T's steers, and confess that we never saw handsomer cattle. It must be taken into consideration, however, by all who think of engaging in using the above "machine," that Mr. Tinkham has some of the best grazing land in the state.

NEW CEMENT.—The late conquest of Algiers by the French has made known a cement used in the public works of that city. It is composed of two parts of ashes, three of clay and one of sand. This composition, called by the Moors, *Fabbi*, being again mixed with oil, resists the inclemencies of the weather better than marble itself.—*Beija Flor*.

MISCELLANEOUS.

EDUCATION OF FARMERS.

The following are extracts from a pamphlet entitled, "The Cause of Farmers, and the University in Tennessee," by PHILIP LINDSEY, D. D.

Democratic and republican as we are, our citizens are strangely partial to great names. Esquire, Honorable, Excellency, Major, Colonel, General, Doctor, are as much coveted and as eagerly sought after in this country, as are titles of nobility in Europe. And foreign titled gentry, when they condescend to visit us, are regarded and treated as a superior race. The wealthiest and proudest man in the United States would feel himself and family wondrously honored and *renewed*, could he be so fortunate as to marry his daughter to an English earl or even baronet! This spirit, so utterly at variance with our constitution and avowed political doctrines, is sufficiently contemptible to be left, without serious comment, to the ridicule which it merits, were it not for some of its deleterious practical effects on society. And among these is the evil in question. Our people, at first, oppose all distinctions whatever as odious and aristocratical; and then, presently, seek with avidity such as remain accessible. At first, they denounce colleges; and then choose to have a college in every district or county, or for every sect and party—and to boast of a college education, and to sport with high sounding literary titles; as if these imparted sense, or wisdom, or knowledge. How long this puerile vanity will continue in vogue, it is not easy to foresee.

Our farmers ought, beyond all question, to be liberally educated; that is, they ought to have the best education that is attainable. I do not say that every farmer ought to go to college, or to become a proficient in Greek and Latin. I speak of them as a class: and by a liberal education, I mean such a course of intellectual discipline as will fit them to sustain the rank which they ought to hold in this republic. They are by right the sovereigns of the land, because they constitute an overwhelming majority. Why do they not then, in fact, rule the land? Because, and only because, they are too ignorant. And thus they sink into comparative insignificance: and suffer themselves to be used as the mere instruments of creating their own masters, who care as little for their real welfare as if they were born to be beasts of burden. Were it possible, I would visit every farmer in Tennessee, who is not already awake, and endeavor to arouse him from his fatal lethargy, by every consideration which can render life and liberty desirable; and urge him to reclaim his abandoned rights and his lost dignity, by giving to his sons that measure of instruction which will qualify them to assert and to maintain their just superiority in the councils of the state and of the nation, like men proudly conscious of their intellectual as well as physical power.

The same general remarks apply to mechanics and to all the laboring classes, in proportion to their numbers. An education, even of the highest order, may be as valuable to them as to others. In our free country, a farmer or mechanic, with equal talents and intelligence, would be more likely to become a popular favorite, than either a lawyer, or the well-bred heir of an opulent patrician family. Suppose a farmer could speak as well, write as well, appear as well versed in history, geography, statistics, jurisprudence, politics, and other matters of general and local interest, as the lawyer—would he not stand a better chance of being elevated to the highest, most honorable, and most lucrative offices?

The grand bereavement on the subject of education seems to have arisen from the usage which obtained at an early period in modern European society, and which many centuries have sanctioned and confirmed, namely:—that a learned or liberal education was and is deemed important only for a liberal profession, or for

gentlemen of wealth and leisure. Hence the church, the bar, and the medical art, have nearly monopolized the learning of the world. Our people reason and act in accordance with the same absurd and aristocratic system. The *cui bono* is upon every tongue. "What good, it is asked, will college learning do my son? He is to be a farmer, a mechanic, a merchant." Now, I would answer such a question, in the first place, directly, thus:—"A college education, or the best, most thorough and most extensive education that can be acquired, will be of immense benefit to your son, simply as a farmer, mechanic, merchant, manufacturer, sailor or soldier." And I would patiently endeavor to show him how, and in what respects; but I will not attempt to illustrate such truisms at present. But, in the second place, I would reply to my plain friend's interrogatory, thus: "Educate your son in the best manner possible, because you expect him to be a MAN, and not a horse or an ox. You cannot tell what good he may achieve, or what important offices he may discharge in his day. For aught you know, he may, if you do your duty by him, become the President of the United States. At any rate he has reason and understanding, which ought to be cultivated for their own sake. Should he eventually live in the most humble retirement, and subsist by the hardest manual labor, still he may enjoy an occasional intellectual feast of the purest and most exhilarating kind." If all our laboring fellow citizens could relish books, and should have access to them, what a boundless field of innocent recreation and profitable entertainment would always be at hand and within their reach! What a flood of cheering light and happiness would be shed upon the dark path, and poured into the bitter cup of millions of rational, immortal beings: who, at present, rank but little above the brute in their pursuits, habits and enjoyments!

FORMATION OF SOIL.

The first inroads of fertility on barrenness are made by the smaller lichens, which, as Humboldt has well observed, labor to decompose the scorified matter of volcanoes, and the smooth and naked surfaces of sea deserted rocks, and thus to "extend the dominion of vitality." These little plants will often obtain a footing where nothing else could be attached. So small are many that they are invisible to the naked eye, and the decay of these when they have flourished and passed through their transient epochs of existence is destined to form the first exuvial layer of vegetable mold; the successive generations give successive increments to that soil from which men are to reap their harvests, and cattle to derive their food; from which forests are destined to spring, and from which future navies are to be supplied. But how is this frail dust to maintain its station on the smooth and polished rock, when vitality has ceased to exert its influence, and the structure which fixed it has decayed? This is the point which has been too generally overlooked, and which is the most wonderful provision of all: the plant, when dying, digs for itself a grave, sculptures in the solid rock a sepulchre in which its dust may rest. For chemistry informs us that not only do these lichens consist in part of gummy matter, which causes their particles to stick together, but that they likewise form, when living, a considerable quantity of oxalic acid; which acid, when by their decay set free, acts upon the rock, and thus is a hollow formed in which the dead matter of the lichen is deposited.—Furthermore, the acid, by combining with the lime-stone or other material of the rock, will often produce an important ingredient in the vegetable mold; and not only this, the moisture thus conveyed into the cracks and crevices of rocks and stones, when frozen rends them, and by continual degradation [disintegration] adds more and more to the forming soil.—Successive generations of these plants successively perform their duties, and at length the barren breakers, or the pumice plains of a volcano, become converted into fruitful fields.—*Prof. Burnett*.

Prices Current at New York, June 1.

Beeves, yellow, 18 a 20. *Cotton*, New Orleans, 12 a 15; Upland, 11 a 14; Alabama, 11 a 14. *Cotton Baggings*, Hemp, yd. 15 a 21; Flax, 11 a 15. *Flax*, American, 8 1/2 a 9. *Harvard*, bush, clean, 15 00 a 15 25; rough, 15 00 a —. *Flour*, N. York, bbl. 5.50 a 5 62. *Canal*, 5.50 a 5.75; Balt. How'd St. 5.75 a 6.00; Rhd'd city mills, — a —; country, 5 62 a 5.75; Alexandria, 5 62 a 5.75; Fredericksburg, 5 62 a 5.75; Petersburg, 5 62 a 5.75; Rye flour, 5.75 a —; Indian meal, per bbl. 3.75 a —; per mid. 3 50 a —. *Grain*, Wheat, North, — a —; Vir. — a —; Rye, North, 5.75 a 5.75; Corn, Yel. North, 5.75 a 7.11; Bailey, — a —; Oats, South and North, 38 a 41; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; *Provisions*, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, 7 1/2 a 9.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1 1/2 " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each. *Half Blood and upwards*.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address—**L. I. HITCHCOCK,**

Amer. Fur. Office.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life,) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 45 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

L. I. HITCHCOCK,

Ap. 26—tf. Amer. Farmer Establishment.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1852, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13 1/2 and the other 13 1/4 hands high, and will yet grow three or four inches; their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Maltese Jacks, it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to **L. I. Hitchcock**, American Farmer establishment, Baltimore. The price is \$600 each.

TO VINE DRESSERS.

The Subscriber, wishing to engage a Vine Dresser to take charge of a flourishing and fruitful Vineyard, offers the most favorable terms to a person who can furnish testimonials of a good character.

For particulars apply to **L. I. HITCHCOCK**, American Farmer Establishment, or to the undersigned by letter, addressed to Brown's Mills, Millin Co. Penn.

May 24. 1855. **JOSEPH HENDERSON.**

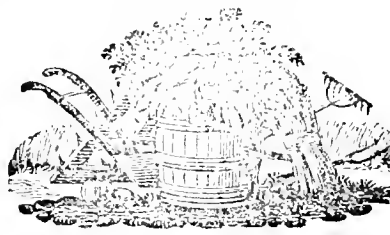
HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents.

IMPROVED DURHAM SHORTHORNS.

Several young BULLS got by Bolivar out of selected cows,—one nearly two years old, two yearlings, and two spring calves,—for sale at the Epsom Farm, seven miles and a half from Baltimore, on the York Turnpike road.

The bull Bolivar was bred by J. Whitaker, from the best stock in England, and imported by J. H. Powell, Esq. April 12, 1855.



HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Seythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 do. Hay and Manure FORKS.

30 do. RAKES and Wooden tined FORKS.

SEYTHES and Sneaths, hung ready for use.

SICKLES, English and American Seythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed, and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them.

May 24.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.

Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—Sales of Howard Street flour have been made at various rates embraced by our quotations. Probably \$5.56 may be considered the average store price, and \$5.37 1/2 the wagon price. Wheat has declined, and corn advanced a trifle, but the variations are too unimportant for consideration.

Tobacco.—Seconds, as in quality, 3 00 a 5 00; do. ground leaf, 5 00 a 9 00;—Clasp, common, 3 00 a 5 00; brown and red 4 50 a 6 00; fine red, 6 00 a 8 00; wrappery, suitable for segars, 6 00 a 15 00; yellow and red, 9 90 a 15 00; yellow, 16 00 a 20 00.—Fine yellow, 18 00 a 25 00;—Virginia 4 00 a —.—Rappahannock, 3 00 a 4 00.—Kentucky, 3 50 a 8 00. The inspections of the week comprise 406 hds. Md.; 141 hds. Ohio; and 9 hds. Penn.—total 646 hds.

Flour.—Best white wheat family, \$6 75 a 7 25; super Howard-street, 5 50 a 5 62 1/2; city mills, 5 75 a —; city mills extra 6 00 a —;—Corn Meal, bbl. 3 62 1/2;—GRAIN, best red wheat 1 12 a 11 8, white do. 1 22 a 1 25;—Corn, white 63 a 64, yellow, 64 a 65;—Rye, 68 a 70;—OATS, 37 1/2 a 41;—BEANS, 75 a 80;—PEAS, 65 a 70;—CLOVER-SEED 8 00 a —;—TIMOTHY, — a —;—ORANGE GRASS 3 00 a —;—Tall Meadow Oat Grass 2 00 a 2 50;—Herd's, — a —;—Lucerne — a 3 7 1/2 lb.;—BARLEY,—Fines 1 50 a 1 62;—Cott. Va. 11 1/2 a 13;—Lou. 12 1/2 a 14;—Alab. 11 1/2 a 13;—Tenn. 11 a 12 1/2;—N. Car. 12 a 13;—Upland 12 1/2 a 13 1/2;—Wmsey, hds. 1 1/2 a 1 29 a;—in bbls. 31 a 32;—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18. Hemp, Russia-ton, \$195 a 205. Country dew-rotted, 6 a 7 c lb. water-rotted, 7 a 8 c;—Feathers, 37 a 37 1/2;—Plaster Paris, per ton. — a 1 25; ground, 1 50 a — bbl. Iron, gray pig for foundries per ton 33 00 a —; high pig for forges, per ton 25 00 a 30 00; bar Sus. per ton, 75 00 a 85 00.—Prime Beef on the hoof, 5 75 a 6 50.—Oak wood, 2 56 a 2 75; Hickory, 4 00 a 4 50; Pine, 2 00.

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The American Farmer,

Edited by GIBSON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum; due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

5. DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "L. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JUNE 14, 1833.

EXHIBITION OF THE HORTICULTURAL SOCIETY OF MARYLAND.—We were delighted, on Tuesday and Wednesday last, with the splendid exhibition of our infant Horticultural Society. It surpassed our expectations immeasurably; not that we saw plants or other objects that we did not know existed here, but that we did not expect to find our amateur horticulturists and florists so speedily and spiritedly enlisted in the cause. It is true, there are a few rare plants in some of the northern cities, which were not at the exhibition, but take it "for all in all," and as a first effort, it was creditable to our city, to our horticulturists, and especially to the committee for the good taste displayed in the arrangement of the plants.—The room, the musical saloon of the Athenæum, is the best in the city for such an exhibition, and the committee availed of all its advantages with great judgment and skill. We were gratified to see several eminent horticulturists and other gentlemen from other cities in the room, among them, Col. Carr and his son, of the celebrated Bartram Botanic Gardens of Philadelphia; Mr. Parker, of the same city; Mr. Barnitz, of York, Pa. and others.

We expect a detailed account of the exhibition from the chairman of the Committee of Arrangements, and, therefore, shall not attempt particulars. The season was rather unfavorable for flowers, the spring bloom having passed, and that of summer not sufficiently advanced for much display. Yet there were some splendid flowers, among them several fine Cactuses, and Amarylises—the *A. Johnsoniænsis*, exhibited by Samuel Feast, was the finest exotic plant in bloom, in the collection. Mr. Pearce, of Washington, exhibited some of the finest lemons, citrons, and oranges, we ever saw, and the gooseberries of Isaac McKim, Esq. were very conspicuous. Mr. Sam'l Feast, also exhibited some raspberries, from plants raised by him from seed, that were superior to any we ever before saw.—They are very early, large, firm, and of fine flavor. For these raspberries, Mr. Feast received the first premium plate, valued at \$20. Without doubt, the spirit of horticultural improvement has been aroused from its lethargy in Baltimore, and we may now expect to see our city among the first in the union, for useful and ornamental horticulture.

At 12 o'clock on Wednesday, an address was delivered to a crowded audience, in the saloon, by John P. Kennedy, Esq. We know not how to speak of it in terms sufficiently expressive of our feelings. It has been our vocation to read addresses of this kind for some seven years, during which time we have read some hundreds, but we never before had the pleasure of listening to, or of reading one equal to that of Mr. Kennedy. For appropriateness of remark, aptness of allusion, elegance of diction and enunciation, and above all, for beautiful classical illustration, it seems to us to have been unrivalled. We hope to be able to present the address to our readers next week, when we feel assured of their concurrence in all we have here said of it.

The following letter from Mr. Morris to Mr. Hitchcock, will account for the failure of the Fellenberg Institution, some time since established at Bolton Farm. The duty devolved on us by our peculiar situation, of communicating to Mr. Morris the information which led to the dissolution of the school, was one of the most disagreeable we ever performed; but where duty led, we could not hesitate to follow. We hope most sincerely that the patriotic labors of Mr. Morris, will ultimately be crowned with success; for, in his case, the remark of Virgil, quoted by him, is indeed, most true—"Sic vos non vobis," &c.

We would remark that the "general place of reference," &c. which Mr. Morris considers so necessary, has

been one of the objects of Mr. Hitchcock's Agency Establishment, from the commencement, and that he devotes particular attention to it.

Bolton Farm, near Bristol, Penn }
L. I. HITCHCOCK, Esq. May 31, 1833. }

Dear sir.—Your obliging favor of the 27th inst. was not received by me until yesterday, having been mislaid to the post-office, Burlington. I recognise, with peculiar pleasure, in it and its annexed advertisement, the very important connection of a General Agricultural Establishment with the publication of the American Farmer. Of this union permit me to express my particular sense of the great public benefit, and my hope that it will become as productive to yourself as its obvious utility merits.

The late Fellenberg Institution, which was established, at my suggestion, on Bolton Farm, and was conducted for some time in such a manner as to afford me the most conclusive proofs of its peculiar adaptation to our country, finally failed here, in consequence of the information communicated in August, 1831, by yourself and Mr. Smith, relative to the person to whom was committed its most important details.—R. L. Colt, Esq. of Baltimore, was present at the investigation, and its result, to which your information led; his high respectability of character, with that of other gentlemen who attended the investigation, sanctioned the conclusions which were adopted on the subject. The superintendent, alluded to, was dismissed; and the Institution at Bolton was soon after closed, for want of a suitable practical superintendent.

The seeds, however, of great and permanent utility were sown at Bolton, and the harvest will be reaped after many days, though not perhaps by those who have sown the seed: *sic vos non vobis melificatis*.

Institutions, in different parts of the United States, are, nevertheless, increasing, under various names and modifications, on the principles of Fellenberg, uniting intellectual and moral culture with useful agricultural, manual and mechanical labor, and from the results of these institutions, we shall soon find, as you suggest, that "the farm, the garden and the workshop will be considered the best schools for the preparation of useful and independent members of our republic." Combined education and industry can alone banish intemperance, ignorance and idleness from our rural population, the only pure source of the sovereign power of the people.

While the publication of the Farmer gives the information requisite to form practical men, your establishment of a general depot for every description of stock, machinery, implements, and seeds, seems calculated to furnish all that can be required by the agricultural community, except, perhaps, (permit me to observe,) what is a most essential want in every part of the United States, that is a general place of reference, where might be found, or from which reference might be made, to persons qualified for the situations of tenants, overseers, superintendents of all the descriptions of farms, dairies, stocks of cattle, gardeners, &c. &c. and to which all such persons, especially foreigners, might apply for places. With most sincere wishes for the success of your new establishment, I am, truly, your ob't serv't and friend.

ANTHONY MORRIS.

SOAP LEY has been accidentally discovered by a soap boiler to be excellent for garden walks or house yards. He spread in a wet state the black sulphurous residuum of the ley tubs on the alleys of his garden—which would not raise any grass or weeds afterwards, nor permit any growth within some inches of the place.—Delighted with the discovery, he had merely to put a covering of the sand over the refuse to obtain the finest walks possible—and having had occasion to repave his yard, he used the like soft refuse, instead of mortar, which soon hardened, and cemented the stones so well that the heaviest carriages occasioned no disadjustment.—*Silliman's Journal*.

PRIZE ESSAY.—We learn from the Richmond Enquirer, that the premium of thirty dollars, offered by the editor of the "Virginia Farmer," for the best essay to be entitled "Agriculture in Virginia," has been awarded to C. W. Gouch, Esq. of Henrico county.

The essay will speedily be published, and, we need scarcely say, it will be immediately transferred to our columns—the name of the author being a sufficient guaranty for the requisite qualifications.

RAIN.

June 1, 1833.

Mr. SMITH: The depth of rain, which fell during the last month, as indicated by the rain gauge, kept on Beechfield farm, the property of James Beacham, Esq. four miles from the city of Baltimore, on the Frederick road, was 5 12-100 inch.

THOMAS SMITH, Manager.

CHICK IN THE EGG.—The hen has scarcely sat on the egg twelve hours, when we begin already to discover in it some lineaments of the head and body of the chicken that it is to be born. The heart appears to beat at the end of the day; at the end of forty-eight hours, two vesicles of blood can be distinguished, the pulsation of which is very visible. At the fiftieth hour, an auricle of the heart appears, and resembles a lace, or noose folded down upon itself. At the end of seventy hours we distinguish wings, and on the head two bubbles for the brain; one for the bill, and two others for the forepart and hindpart of the head—the liver appears towards the fifth day. At the end of one hundred and thirty-one hours, the first voluntary motion is observed. At the end of one hundred and thirty-eight hours the lungs and stomach become visible—at the end of 142, the intestines, the loins, and the upper jaw. The seventh day, the brain, which was slimy, begins to have some consistence.—At the 160th hour of incubation, the bill opens, and the flesh appears in the breast. At the 194th, the sternum is seen, that is to say, the breastbone. At the 210th, the ribs come out of the back, the bill is very visible, as well as the gall bladder. The bill becomes green at the end of 236 hours; and if the chick is taken out of its covering, it evidently moves itself.—The feathers begin to shoot out towards the 240th hour, and the skull becomes grisly. At the 264th the eyes appear. At the 288th, the ribs are perfect. At the 331st, the spleen draws near to the stomach, and the lungs to the chest. At the end of 355 hours, the bill frequently opens and shuts; and at the end of 451 hours, or the 18th day, the first cry of the chick is already heard—it afterwards gets more strength, and grows continually, till at last it sets itself at liberty, by opening the prison in which it was shut up. Adorable wisdom of God! it is by so many different degrees that these creatures are brought into life. All these progressions are made by rule! and there is not one of them without sufficient reason. No part of its body could appear sooner or later, without the whole embryo suffering, and each of its limbs appear at the most proper moment. This ordination, so wise, and so invariable in the production of the animal, is manifestly the work of a Supreme Being.

FOREIGN MARKETS.

LIVERPOOL COTTON MARKET, May 9.

Sales on the 4th, (Saturday,) about 1500 bags, without change in prices. 6th, about 2000 bags, no change. 7th, about 1000, no change. Stb, 1500 bales, viz. 200 Brazils in Marahams at 9d to 9½c; and Bahais at 8½d; 50 Egyptians, 10d to 10½d; 50 Surats, 5½d; and 1200 in American descriptions, from 6½d to 8d. 9th, we have had a very steady cotton market to-day, and the sales amount to upwards of 3000 bags, at full prices, 1300 of which have been taken for export.—In Baltimore flaxseed small sales have been made for sowing, at 72s 7d to 75s.

AGRICULTURE.

(From the Northern Farmer.)
CULTURE OF WHEAT.

While New England is, to so very great an extent, dependent on the southern and western states for her supplies of flour, any inquiries which might result in the discovery of the causes, which have rendered either the soil or climate of so considerable a section of the country unfavorable to the culture of wheat, could not be uninteresting to our farmers. That a great change has taken place in this part of the country in relation to the culture of wheat, there can be no doubt. Forty years ago, when our lands were comparatively new, wheat was a certain and profitable crop. The same lands which then produced abundantly, cannot by any mode of culture now in practice, be made, in ordinary seasons, to produce enough of this grain to defray the expenses of cultivation. But are we therefore to conclude, that our lands have, by this comparatively short period of cultivation, become exhausted of that principle which forms the proper food of this plant, when the lands of Europe, which have been in a state of cultivation, probably for more than eighteen hundred years, still produce wheat in abundance? Or, are we to attribute the general failure of this crop to the ravages of the insect tribes? or, to the want of that skill in the culture of this plant, which seems to be abundantly possessed by the English husbandman, provided success be considered as evidence of skill? Whatever may be the cause which has produced this influence, it is certain that the effect exists.

Doctor Dwight, president of Yale college, a gentleman possessing habits of the closest observation, and with great powers of discrimination, after having travelled much in New England and the state of New York, previous to the year 1822, found the farmers at that time laboring under the same discouragements in relation to the culture of wheat, which now prevail, though, perhaps, not to so great an extent. As the result of his investigation at that period, he says:

"The reason why the lands in New England, which formerly yielded wheat, surely and plentifully, suffer at the present time such injuries from the blast, as in a great measure to discourage farmers from attempting to cultivate it, has been anxiously and extensively sought for, but not it is believed, satisfactorily discovered. From my own observations and inquiries, I have been induced to attribute this evil to the efficacy of animal manure. This subject has been already mentioned in my observations on the county of Worcester: it shall now be resumed.

"The manner in which wheat is generally blasted in New England, appears to me very evidently to be this: During the months of June and July, when the kernels of wheat in the different climates of New England, are in the milk, the vegetation is far more rapid than in most countries of Europe.—Whenever the season at this period is both moist and hot, the rapidity becomes extreme. The vegetable juice, ascending then in too great quantities, and with a new celerity, moves with difficulty through the vessels of the stock, regularly lessening towards the neck, and at that time so tender as to be easily ruptured, bursts them in various places, particularly at the neck, and flows out upon the surface of the stem. When it first exudes, it is very sweet to the taste; and has hence been commonly supposed to be the residuum of a particular kind of dew, called by the farmer honey-dew. Had any farmer recollected, what he cannot fail to find, where he finds a honey-dew, that it never appears on any thing beside living vegetables, and that, if it were a dew, it must be found equally on every other substance exposed to the atmosphere, he would certainly have determined, that it was merely the sweet juice of the vegetable itself. When this juice has pervaded the stalk, it soon becomes sour in the sunbeams; then so acrid, as to corrode the stalk,

and finally a rust, (as it is commonly called,) of a brown hue, and an offensive smell.

"Animal manure beyond any other, accelerates vegetation. Wheat, nurtured by this manure, grows with so much rapidity, and with so slender a stalk, that, in the agricultural language of this country, it lodges not unfrequently (i. e. falls under the pressure of wind or rain) by its own weight, and never recovers its original position. This dangerous process is peculiarly advanced by the use of this manure; and the rapidity of vegetation, otherwise too great, is by this substance rendered still greater. Hence all fields, where this manure is employed, are peculiarly exposed to blast. For a few years after lands are dressed with it, the evil is so evident to the eye of common observation, as to be not unfrequently believed to exist by some farmers, and suspected by others. Were every season hot, and wet during this period, it would, I doubt not, have long since been generally realized and acknowledged. But as in some seasons these months are cool and dry, and those fields which have been dressed with this manure, then yield wheat successfully; and as in the most unfavorable season, lands dressed in a different manner, are also subjected to the blast; the question has, hitherto failed of any answer, which has been generally satisfactory.

"The reasons which have induced me to adopt the opinion here alleged, are principally the following:

"1. All the lands in this country, which were not too wet, originally yielded wheat easily, surely, and so far as they were rich, abundantly. The inhabitants of Northampton, for many years paid their public tax in wheat, and this wheat grew on the very lands, where for a long period it has been supposed to be so uncertain an object of culture, as to be scarcely worth the attempt, i. e. on intervals.

"2. New lands yield wheat perfectly well in most parts of this country at the present time. Some farmers believe, that there is such a change wrought by time, either in the climate or in the soil, independently of the proper effects of culture, that the blast is to be attributed to this change. Although this is a mere supposition, supported by no evidence, it has still had its weight. But it is entirely refuted by the fact, mentioned under this head. Lands in the same circumstances yield wheat as abundantly at the present time, as at any former period. It deserves to be remarked, that all the intervals along the Connecticut have furnished sure crops of this grain for a considerable time after they first began to be cultivated.

"3. Lands dressed with ashes, now furnish fine crops of wheat, which is rarely or never blasted. The only reason why the crops on new lands are so safe from the blast, is that they are covered with vegetable mold, another name for vegetable manure; and so long as the efficacy of this manure lasts, are dressed with no other. It is the universal tendency of this mold to produce great crops; but it produces them by a gradual and moderate vegetation. Ashes, which are the same manure in another form, produce the same effect in exactly the same manner. Accordingly, although the crop of wheat, yielded by grounds dressed with ashes, is abundant, yet the stalk is firm, and strong; much stronger, but much shorter than that produced by animal manure, and equally safe from lodging, and blasting, as that which grows on vegetable mold.

"It ought to be observed, that in grounds where the vegetable mold is very deep and abundant, wheat grows so rapidly as to be universally blasted. That this effect is solely derived from the redundancy of this manure is certain, because the same lands after the cultivation of a few years yield wheat perfectly well.

"4. In various instances, which have fallen within my knowledge, wheat sown after clover has been perfectly free from any injury by the blast; and that on intervals, and other lands most liable to this injury.—Here vegetable manure has been employed in another form; yet the same effect has been produced.

"5. Lands, dressed with gypsum, have been equally favorable to wheat. This good effect has, however, been commonly produced through the medium of clover; the gypsum having been first employed for the production of this plant, and the wheat having been sown after the clover had been ploughed in.

"6. Fields manured with the white fish, have yielded wheat universally in great abundance, and with almost absolute certainty. This is indeed animal manure also; but very different from that, which I have intended by this phrase above; viz: that of stable and barn yard. The white fish is a species of herring, very fat and oily, and remarkably favorable to vegetation of every kind, which is the object either of agriculture or horticulture. I have mentioned this fact, that the evil complained of, has its origin neither in the soil, nor in the climate, but in the particular mode of cultivation, which I have mentioned as its proper cause.

"7. The lands in Pennsylvania, which yield plentiful crops of wheat, are regularly dressed with lime, or gypsum; and neither here, nor in those old settlements in the state of New York, where this grain is least exposed to the blast, are cattle very numerous. Of course, the kind of manure which I suppose to be noxious to this plant cannot abound in these countries. I am informed also, that where this manure is used, it is generally mixed with other substances in a compost; and converted, either partly, or wholly, into mold, before it is employed as a dressing. It ought also to be observed, that a great part of the wheat lands in these countries are clay; and that the process of vegetation may be therefore materially different from that which exists in New England, where the soil is principally loam with the mixture of gravel. It is, however, said, that in Pennsylvania their crops fail, where they are unable to dress their lands with lime, or gypsum. It is also said, that the lands along the Mohawk river, which have heretofore yielded wheat with great certainty, as well as luxuriance, are gradually becoming less and less fitted for this kind of culture."

I have been informed that at Newbury they have lately adopted a new kind of husbandry, by means of which the crops of wheat are no less sure and prosperous than they were formerly. What this mode is, I have not, however, been able to learn.

In my own belief, animal manure, produces this noxious effect long after it has ceased to enrich the soil. Although its influence has in this case become small, yet so far as it extends, it is mischievous; and may at the dangerous period above mentioned accelerate a growth, at least sufficiently rapid, otherwise, so as to produce the evil in question. Thus, I consider grounds, long devoted to pasturage, as being injurious to the culture of wheat, as really, though in a less degree, as those which are manured from the stable in form.

(From the Genesee Farmer.)
CULTURE OF FLAX.

Rochester, May 8, 1833.

Having resided in this country a number of years, and frequently observed the manner of cultivating flax—its coarseness of texture, length, &c. when compared with the flax of Germany or Ireland, I have thought a few observations of the culture as generally practiced by the most experienced flax growers of Ireland, would attract the attention of some of our practical farmers. Although my occupation is not to wield the axe or hold the plough, but the feathered goose-quill my favorite, yet I hold it a duty we owe one another to publish and inform all that lays in our power, of any new improvement either in agriculture, horticulture, or the mechanic arts; for this object, I have made the following remarks, which I shall class under different heads.

I. PREPARATION OF THE LAND.—The potato land of last year, which has been well manured, and borne but one crop of potatoes, being most likely to produce

a prime crop of flax, a portion should be set apart for that purpose, and ploughed as early in the spring as possible, if it can be done late in the fall the better; previous to sowing, the land must be made very fine, by a second ploughing and harrowing; all lumps must be broken, stones picked off, and all the weeds taken off.

II. CHOICE OF THE SEED.—This should be of a bright color, plump, and which, when bruised, appears of a light or yellowish color, oily and fresh in the heart; and such as is sweet, both to the taste and smell, may be depended on as good.

III. SOWING.—The seed should be sown with an even and careful hand; any time from the first of April to the first of May, perhaps the fifteenth to twentieth, is not too late in ordinary seasons for this country. (If clover or grass seed is to be sown, it should be done at the same time, the grass sower following the flax sower.) The seed to be sown broad cast and covered lightly with the harrow. The land is then to be water furrowed, by running the plough up or down at the distance of every six feet.

IV. WEEDING.—This process should never be omitted. When the flax is well up above the ground, say four or five inches, it should be carefully weeded by women and children, who may stand or sit on the bed, and by all means have the weeds carried clear off the ground. The crop is at this period to be rolled, (if practicable); the flax will be much improved by this process, and experience has shown that flax grows much faster after being weeded than it does before.

V. PULLING.—The flax is fit to pull when there is a light yellow tinge throughout. If not pulled in time, the flax will be coarse. Previous to pulling, bands of rushes should be gathered, dried, and well beat for binding the flax with. Any flax which grows short and branching, should be left to ripen more in order to perfect its seed, it being fit for little else. The pullers should catch the flax about the middle, and when they have their hands full, to pull up, and to the standing crop; when bound, it should be left for two days in this state to dry. If very fine flax is wanted, it should be pulled at an earlier stage; and if there is a material difference in the fineness of parts of the crop, the different qualities should be kept separate.

VI. RIPPLING.—Where it is intended to save the seed, and not to look for a crop of good flax, the seed should be taken out, by taking a handful of the flax, and drawing it through a ripple; an instrument like a rake, or a single row of a hackle, but wider than the latter. The seed should be well dried in the sun, then thrashed, sieved and winnowed; and put in a dry place for the next year.

VII. BAGGING AND WATERING.—Let the flax be bound into small sheaves with the rush bands, the root end put downwards in the water, and covered with ferns or light brush. The water should be stagnant; bog water when to be had is to be preferred. The softer the water, the speedier the operation, and the deeper the water the better. The flax is generally sufficiently hogged in fifteen days. It is fit to take out, if the stalk when broke in the hand, parts freely from the flax. It should be examined every day after ten days, as some waters act more speedily than others; the same water will not do again. When sufficiently watered, the flax should be taken out and gently rinsed: it should be very carefully and gently handled.

VIII. GRASSING.—The flax should be taken to a clean lay field, or to a meadow cleared of hay; the rush bands collected, and put to dry for next year, and the flax spread out very thin. It should be examined every day after it has been ten days out, tried as before—and when the flax comes off freely from the stem, which is then brittle, it is grassed sufficiently. It is then to be tied up in sheaves, and should be left out for a few days to dry; when it may be either stacked or boused; if stacked, it should be thatched to the ground, having first put a dry bottom under it.

IX. DRYING.—The flax should be well dried in

the sun on a warm day; and scutch it as soon afterwards as possible. Stoving is found prejudicial to the staple, and if resorted to, is to be used with the greatest caution, it being found to make the flax very brittle, dries up the substance, and makes the bleaching more difficult, and yields much less at the hackle.

LASTLY, TRY THE EXPERIMENT.—I have this object in view in publishing the above, to state the process as pursued, and found by experience to be best, by the flax growers of Ireland, from whence we derive such fine linen fabrics, and I hope some of our practical farmers will at least make use of any of the above suggestions, and publish their remarks. We have every description of soil and climate, but we are far behind in the improvement of such a domestic production as the flax, although Ireland is yearly indebted to this country for its seed. **HIBERNIA.**

(From the British Farmer's Magazine.)

ON SETTING WHEAT.

This is a method which is reckoned one of the greatest improvements in husbandry that was made during the last century.

It seems to have been first suggested by planting grain in a garden for mere curiosity, by persons who had no opportunity of extending the cultivation for profit. This was first attempted at Norwich, and a few years after by one of the largest occupiers of land in Norfolk, who set fifty-seven acres in one year. His success from the visible superiority of his crop, both in quantity and quality, was so great that in the following autumn he set three hundred acres, and has continued the practice ever since. This noble experiment established the practice, and was the means of introducing it generally among the intelligent farmers in a very large district; there being few who now sow any wheat, if they can procure hands to set it. It has been generally observed that although the set crops appear very thin during the autumn and winter, the plants tiller and spread prodigiously during the spring. The ears are indisputably larger, without dwarfish or small corn;—the grain is of a larger bulk, and specifically heavier per bushel than when sown. The lands on which this method is particularly prosperous, are either after a clover stubble, or on which trefoil and grass seed were sown the spring before the last. These grounds, after the usual manuring, are once turned over with the plough in extending flag or turf, at ten inches wide; along which a man, who is called a dibbler, with two setting irons somewhat bigger than ramrods, but considerably larger at the lower end, and pointed at the extremity, steps backwards along the turf, and makes the holes about four inches asunder every way, and one deep. Into these holes the droppers (women, boys, and girls) drop two grains, which are quite sufficient. After this, a gate bushed with thorn is drawn by one horse over the land, and closes up the holes. By this mode three pecks of grain are sufficient for an acre: and being immediately buried, are equally removed from vermin or the power of frost. The regularity of its rising gives the best opportunity of keeping it clear from weeds, by weeding or hand hoeing. Setting of wheat is a method peculiarly beneficial when corn is dear; and if the season is favorable, may be practised with great benefit to the farmer. Sir Thomas Beevor, of Hethel Hall, in Norfolk, found the produce to be two bushels per acre more than from the sown wheat; but having much less smaller corn intermixed with it, the sample is better, and always fetches a higher price, to the amount generally of two shillings per quarter.—This method, too, saves to the farmer and the public six pecks of seed wheat in every acre; which, if generally adopted, would of itself afford bread for more than half a million of people. Add to these considerations the great support given to the poor by this second harvest, as it may be called, which enables them to discharge their rents and maintain their

families without having recourse to the parish. The expense of setting by hand is now reduced to about six shillings per acre; which, in good weather, may be done by one dibbler, attended by three droppers, in two days. This is five shillings per day; of which, if the dibbler gives to the children sixpence each, he will have himself three shillings sixpence for his day's work, which is more than he can earn by any other labor so easy to himself. But if he have a wife who dibbles with him, and two or three of his own children to drop to him, his gains will then be very important, and enough to insure a plenty of candidates for that work, even in the least populous parts of the country. But the profit of this method, in seasons when seed corn is very cheap, or the autumn particularly unfavorable to the practice, must certainly be lessened.

This, then, is one of the improved methods of farming which the Agricultural Employment Institution ought to adopt. Transplanting wheat is another source of employment for the redundant poor, the beneficial results of which may be seen at the Exhibition of Arts, Charing Cross, sent there by Mr. E. J. Lance of Lewisham.

(From the Genesee Farmer.)

PERMANENT PASTURES.

There is one objection against lands newly laid down to grass, which both Sir John Sinclair and John Lorain seem willing to admit, namely: such grounds being softer than old pastures, are not so eligible for heavy cattle.

The late Judge PETERS, although he admits that "changing crops, or what is called *convertible husbandry* in which grass is only part of the rotation, would be found most suitable to the circumstances of [that] country," yet he appears to have been partial to old pastures. In his *Notices for a Young Farmer*, the remarks, "It will be difficult to keep an old weedy farm long in grass; and the plough must therefore be oftener used than a clean farm requires. Yet with compost as top dressings, and destruction of weeds, wonders may be performed in a grazing system. If you should be so fortunate as to conquer weeds and pests, and obtain a clean cover of the *Poa viridis* or green grass, it is not to be told how long your fields, with top dressings will continue without being disturbed by the plough, if scarified, when surface bound, by a proper instrument.

"The experiment of cleaning by tillage, and meliorating by manure, worn lands, and enable them to throw up grasses spontaneously, has decidedly succeeded, so as to ensure valuable crops of the appropriate kinds which finally establish themselves, after contending with intruders for a time."

From Dr. Mease's Eulogium on William West, it appears that, that eminent grazier was decidedly in favor of old pastures. "A permanent pasture was the object he aimed at, for he held it a principle that every country was blessed by a native permanent pasture grass.

"He had the satisfaction to see the complete success of the practice. For as the artificial grasses declined, the permanent native green grass took their place; and only required a repetition of the practice which caused its appearance, to insure its continuance; and for many years, he exhibited the only instance in the county, of an entire sward of green grass upon an upland farm; and of fields which had not been disturbed by the plough for upwards of thirty years."

In the latter case, it is evident that West's attention was entirely turned to grazing; but in this fine wheat growing district, very few, if any, of our farmers confine their attention to stock, generally deeming the *convertible husbandry* the most profitable.—Yet there are circumstances with us, in favor of retaining an old pasture field, which do not prevail in

**Poa viridis*, of Muhlenberg—*Poa pratensis*, of Linnæus—the spear grass of the Genesee country.

some other districts no manure to prevent its deterioration, is required—so fertile are our lands; and simply to convert it into meadow *without pasturing* for a year or two, will cure it of being *surface bound*.
A FARMER.

(From the Genesee Farmer.)

CUTTING OFF INDIAN CORN IN THE FALL.

Indian corn in the past season was remarkably backward in ripening; and having a field that I was anxious to sow at the proper time, I was under the necessity of cutting and removing the corn on the stalks while it was in a very green state. Several of my neighbors said that much of the crop would be lost, and indeed I was apprehensive of the consequences; but when we came to husk it, I was surprised to find it in so dry a state, and so free from moldy damaged ears; though much of it was so soft that we fed it out as soon as we could to our fattening hogs and beef cattle. Another field of Indian corn, in the same state, which we topped at the usual time, has not turned out so well, as there were more moldy ears.—Until that time I had always been an advocate for *topping*, and nothing but necessity induced me to try the experiment of cutting the green stalks at the ground.

The corn when cut off was not put into *stooks* [shocks] but placed round the field against the fence; and we think it probable that the ears would be less liable to mold in that situation than if they were bound up in *stooks*.

HORTICULTURE.

(From the London Horticultural Register.)

ON FORCING BULBS TO CAUSE THEM TO FLOWER IN WINTER.

Mere Hall, Feb. 20, 1833.

Being a constant subscriber since the commencement of the Register, I have, with several of my neighbors, hailed with pleasure, the first day of every month, feeling assured that your Magazine would bring us a fresh supply of important information, to add to our scanty stock of knowledge. I have sent for your insertion, if you think they merit it, a few remarks on my method of forcing bulbs, which I hope may be of some service to the more inexperienced portion of your readers.

Early in October, send for a quantity of Dutch bulbs, as narcissus, tulipa, hyacinthus, &c and previous to doing so, provide a quantity of mold, composed of

Two barrows full of well decomposed hot-bed dung,
One barrow full of fresh loam,

One do of vegetable or leaf mold,

One-quarter of a barrow full of fine sand.

These are to be well chopped, and mixed together, then lay the compost in an open shed, to dry a little before using. About the second week in October, pot the bulbs in the above soil, in pots proportioned to the size or sort of bulb. Fill all the pots with soil, and shake it down, but do not press it with the hand before commencing to plant the roots; then lay some clear sand on the soil, in the middle of the pot, and placing the bulb on the sand, gently press it down till within half an inch of the top. Care must be taken not to press with sufficient violence to injure the bulb, yet it must be left firm in the pot; for on these two things much depends, with regard to their growing freely.

After they are potted, and named or numbered, place them in a cucumber or melon frame, prepared after the following manner: Take out the soil, and lay on the old bed about two inches thick of fine ashes, level and make them pretty solid, on the top of this lay a quantity of sifted ashes, in which plunge the pots, making the ashes as firm about the pots as possible. After this is finished, cover the whole to the depth of eight or ten inches with dry light soil. Al-

ways choose a dry day for the purpose, and let every thing be dry that is used about plunging; or the bulbs will be liable to perish. Give air at all times in fine mild weather, but allow no wet or frost to enter the covering soil; at nights, the lights must always be on, and in severe weather closely covered down with mats; but if the nights are mild, the glasses may be tilted, to allow a little air.

In January, take them out of the frame, wash the pots, carry them to the stove for flowering; and give them regularly, a moderate supply of water, to assist them to flower strong. As the flower stalks advance in growth, tie them to neat green or white sticks; and if treated as above they will flower beautifully. Crocuses planted four or five in a pot, flower well when treated as above. I also beg to state, that Mr. J. Knight, of the Exotic Nursery, Chelsea, is supposed to sell as good bulbs, and as cheap, as any person in the neighborhood of London. F. F. ASHFORD.

(From the Genesee Farmer.)

VERNAL FLOWERS.

[In a letter to the Editors, dated May, 13.]

As the season advances, there is a considerable increase in the number of fine flowers. Among these we may reckon for the first part of this month the chalcidonian *Iris*, several kinds of *Paeonia*, the fish blossom or Judas tree, the double flowering almond, the Chinese purple *Magnolia*, the silver bell tree, the poet's *Narcissus*, the auricula, the *Dodecatheon*, and many varieties of the primrose or polyanthus. Many others scarcely inferior must be omitted, with some already mentioned which continue yet in bloom.

The chalcidonian *Iris*, is more interesting on account of its singularity than its beauty. It is not so readily increased as many other species of *Iris*; but it appears to be hardy, though mine has not been fully exposed in the open ground.

Last year my tree *Paeonia* (*P. moutan*) bloomed for the first time, and I felt disappointed, its beauty not equalling my expectations; but this season the flowers are truly superb. I cannot explain the cause of this difference, except that a slight deficiency in the vigor of some plants nearly destroys the beauty of the flowers. These are almost white, increasing to a reddish purple near the centre. It is not entirely double, for which it is the finer, as the yellow anthers dispersed among the petals, and the purple stigmas appear to great advantage. It is said that severe vernal frosts will destroy the flower-buds of this plant, if exposed, as it starts remarkably early in the season.

It is increased by suckers which originate near the base of the stem, but which acquire vigor very slowly when separated.

Paeonia tenuifolia has flowers of a beautiful red, but they are not always equally fine, perhaps on account of its strength being divided among many new stalks which spring from horizontal subterranean *suckers*. This species affords the only example that I have seen among *Paeonias* of this way of increasing.

Cereis canadensis, or the fish blossom, is a large shrub which is found native as far north as the fortieth degree of latitude. It is perfectly hardy in the Genesee country. Its blossoms are a light pink, and so crowded and so numerous as partly to hide the branches. Several travellers who have descended the Ohio river, in speaking of the most ornamental trees which they have seen on their passage, have given this the preference. It merits a place in every good collection.

The double flowering almond (*Amygdalus pumila*, *pl*) is an old resident of the gardens, and doubtless one of the most beautiful. It is increased by suckers, and grows well when budded on the peach tree. It is however subject to the attacks of the *Egoria* as well as the latter tree; and its branches are sometimes disfigured by gummy exudations, probably caused by the irritations of some other insect.

My purple Chinese magnolia (*M. obovata*) is a small shrub of singular appearance with large flowers of great beauty. It has bloomed this season for the first time. Though it stands in open ground, it had some protection in winter and it may be doubted if its large flower buds would abide uninjured in a less favored state.

The silver bell tree (*Halesia tetraptera*) though a native of Carolina is well suited with our climate.—Its blossoms are very numerous and of a silvery whiteness.

Narcissus poeticus is a very fine species: petals white, cups edged with red, are delicately fragrant. It flowers freely, not being subject to blast like some other white kinds.

The *auricula* is an old favorite of the gardeners.—I have slightly protected mine, but have never lost one through the severity of our seasons. They do best in a border shaded from the noontide sun; and rest very securely in winter under a cap of moss.—They flourish most in a highly manured soil. This species of *Primula* is a native of the Austrian Alps; and under cultivation has spread into varieties without number. An amateur has said that more beauty was concentrated in the auricula than in any other flower of the same size.

In the eastern parts of the United States, the northern limits of *Dodecatheon meadia*, varies not greatly from the latitude of Philadelphia, though near the Rocky Mountains it attains a higher latitude, and consequently is entirely hardy in the Genesee country. It is deservedly admired. The corolla of the common kind is a reddish purple, but there is also a white variety.

Dodecatheon integrifolium is a smaller species, but very nearly allied. Instead of having the "pale blue flowers" of Pursh, like the common variety of the other species, they are a reddish purple. All these plants are strictly *vernal*, the leaves disappearing early in summer.

(From the Genesee Farmer.)

CHESTNUT TIMBER.

Greatfield, Cayuga Co. 5 mo. 13, 1833.

My obliging correspondent D. Longstreth, partly, in consequence of some suggestions of mine, lately made a visit to the estimable author of *The Pennsylvania Farmer*, at his residence in Montgomery county, (Pa.) I wanted to ascertain some particulars relating to the growth and durability of chestnut timber, which I now present in an extract from his letter, dated in the second month last.

"I lately made a visit to Job Roberts, Esquire, and was much pleased with a fence he has constructed of stone posts and four good chestnut rails to each panel. It was all white washed. The rails are of the third cutting of chestnut which his father cut for the first time in the year 1777. This wood lot contains three or four acres, and at that time it was covered with the usual mixture of timber, but rather the larger part was chestnut. They obtained about seven hundred and fifty rails, which were made into a common fence on one side of this lot; and the suckers from the stumps were carefully protected from the cattle. The chestnut proved of quicker growth than the other trees, partly overshadowing them; and there being several suckers to a stump, at the age of twenty-two years the second cutting yielded more than three thousand rails.

"He commenced the third cutting of the chestnut suckers in 1823, and estimates them to yield about eight thousand rails. A part yet remains uncut, but it is evidently on the decline, and he is of opinion that twenty-five years is as long a time as they ought to stand. The trees are very tall and straight, some of them having made seven rail-cuts of eleven feet each. From one quarter of an acre of the best part of the lot, he cut nearly one thousand rails."

*Published in 1804.

To show the durability of good chestnut timber, he remarks, "the rails made from the *first cutting*, fifty-five years ago, are still in good condition."

In regard to the best time for cutting timber with a view to the *sprouting of the stumps*, he says "many proprietors of chestnut lots, on the great valley hills, are careful to cut their rails in the spring when the sap is beginning to flow freely,—as they have ascertained that the stumps will sprout more vigorously than if they were cut in mid-winter. We have cut chestnuts in the latter part of summer that have sprouted freely."

Nothing is said of the best time for cutting timber with a view to its *durability*. It is an old, and I am inclined to think a well founded opinion, that it ought to be cut previous to the rising of the sap in spring; but others have preferred the close of summer just before the fall of the leaf; and we are much in want of accurate experiments on this subject. I should be gratified to know at what season those rails were cut that have lasted fifty-five years.

I will select another paragraph from his letter: "In the year 1797 he had bored logs of the tulip poplar [or white wood] laid down to convey water from a spring to his milk house. Some of these are now beginning to leak; but in the mean time an entire young growth of the same kind of timber has sprung up, which is large enough to replace the old logs."

D. T.

RURAL ECONOMY.

(From the Farmer's Series of the Library of Useful Knowledge.)

GLANDERS IN HORSES.

The most formidable of all the diseases to which the horse is subject, is glanders. It is described by writers fifteen hundred years ago, and it was then, and is now, not only a loathsome, but an incurable disease; we shall, therefore, principally confine ourselves to the consideration of its symptoms, nature, causes, prevention, and degree of contagion, and these will afford much matter of interest to the farmer.

If we could obtain an authentic history of the glandered horse, we should find that in a majority of instances, if the disease were bred in him, he had been dull, off his feed, losing flesh, and his coat staring; and that these appearances had for several weeks preceded the characteristic symptoms of glanders.—These symptoms, however, may lead to, or be the causes of other diseases, or they may pass away, and the horse return to perfect health. That which would be considered as the earliest, and unquestionable symptom of glanders, would be an increased discharge from one or both nostrils; different from the discharge of catarrh, because it is usually lighter and clearer in its color, and more glutinous or sticky. When rubbed between the fingers it has, even in an early stage, a peculiar, clammy feeling. It is not discharged occasionally, and in large quantities, like the mucus of catarrh, but it is constantly running from the nostril.

It is a singular circumstance, for which no satisfactory account has yet been given, that when one nostril alone is attacked, it is in a great majority of cases, the near or left nostril. M. Dupuy, the director of the veterinary school at Toulouse, gives a most singular account of this. He says, that out of eight hundred cases of glanders that came under his notice, only one was effected in the right nostril.

This discharge, in cases of infection may continue, and in so slight a degree as to be scarcely perceptible, for many weeks or months before the health and capabilities of the horse seem to be injured. It will remain for a long time almost transparent, yet gluey; and then it will begin to be mingled with pus; retaining, however, its sticky character, and being rarely offensive in the early stages. The constant flow of this secretion, and its stickiness, with the absence of

enough either before, or during the discharge will be the only symptoms. In process of time, however, pus mingles with the discharge, and then another and a characteristic symptom appears. Some of this is absorbed, and the neighboring glands become affected; and if these be discharged from both nostrils, the glands within the under jaw will be on both sides enlarged. If the discharge be from one nostril only, the swelled gland will be found on that side alone. Glanders, however, will frequently exist at an early stage without these swelled glands, and some other diseases, as catarrh, will produce them. Then we must look out for some peculiarity about these glands, and we shall readily find it. The swelling may be at first somewhat large and diffused, but the surrounding enlargement soon goes off, and one or two small distinct glands remain; and they are not in the centre of the channel, but *adhere closely to the jaw on the affected side*.

The membrane of the nose may now be examined, and will materially guide our opinion. It will either be of a dark purplish hue, or almost of leaden color, or of any shade between the two; or if there be some of the redness of inflammation, it will have a purple tinge; but these will never be the faint pink blush of health, or the intense and vivid red of usual inflammation. Spots of ulceration will probably appear on the membrane covering the cartilage of the nose—not simply sore places, or streaks of abrasion, and quite superficial, but small ulcers usually approaching to a circular form, deep, with the edges abrupt and prominent. When these appearances are observed, there can be no doubt about the matter. Care should be taken, however, to ascertain that these ulcers do actually exist, for spots of mucus adhering to the membrane have been more than once taken for them. The finger should, if possible, be passed over the supposed ulcer, to determine whether it can be wiped away; and it should be recollected, as we have always hinted when describing the duct that conveys the tears to the nose that the orifice of that duct, just within the nostril, and on the inner side of it, has been mistaken for a cancerous ulcer. This orifice is on the continuation of the common skin of the muzzle which runs a little way up the nostril, while the ulcer of glanders is on the proper membrane of the nose above; and the line of separation between the two is evident on the slightest inspection.

It is proper to state that this discharge has continued unattended by any other disease, or even by ulceration of the nostril for two or three years, and yet the horse was decidedly glandered from the beginning, and capable of propagating the malady.

When ulcers on the membrane of the nose have appeared, the constitution will be evidently affected.—The horse will lose flesh; his belly will be tacked up; his coat will be unthrifty and readily come off; cough will be heard; the appetite will be impaired; the strength will fail; the discharge from the nose will grow more purulent, discolored, bloody and stinking; the ulcers in the nose will be larger and more numerous; and the air passages being obstructed, a grating, choking noise will be heard at every act of breathing. The lungs are now diseased; they are filled with tubercles or ulcerations; and the horse at length dies, an emaciated and loathsome object.

The symptoms frequently vary, and to a most puzzling degree. The discharge will be so slight as scarcely to be perceived, and known only by its stickings; and the glands will not be in the least degree enlarged. At other times a very small enlarged gland may be found, adhering to the jaw, and may be stationary month after month, and the surgeon may be told that there has never been discharge from the nose. He will, however, be wrongly informed, for it has most assuredly existed, although perhaps to no great degree, at some former period; and he will generally, without much difficulty, discover it then, although, perhaps, in so small a quantity that the groom will deny its existence; and he will principally satisfy himself with respect to it, by its gluey feeling.

Glanders have often been confounded with *strangles*, and by those who ought to have known better. Strangles are peculiar to young horses. The early stage resembles common cold, with some degree of fever and sore throat; generally with distressing cough, or at least frequent wheezing; and when the enlargement is beneath the jaw, it is not a single small gland, but a swelling of the whole of the substance between the jaws; growing harder towards the middle; and after a while appearing to contain a fluid and breaking. In strangles the membrane, of the nose will be intensely red, and the discharge from the nose profuse and purulent, or mixed with matter almost from the first; and when the tumor has burst, the fever will abate, and the horse speedily get well.

Should the discharge from the nose continue for a considerable time after the horse has recovered from strangles, as it sometimes does, there is no cause for fear. Simple strangles need never degenerate into glanders. Good keeping, and small doses of blue vitriol given internally will gradually make all right.

Glanders have been confounded with catarrh or cold, but the distinction between them is plain enough. Fever accompanies cold, and loss of appetite, and sore throat; the discharge from the nose is profuse, and, perhaps, purulent; and the glands under the jaw, if swelled, are moveable, and there is a thickening around them, and they are tender and hot. With proper treatment the fever abates; the cough disappears; the swellings under the throat subside, and the discharge from the nose gradually ceases, or if it remain, it is usually very different from that which characterises glanders.

A running from the nose, small in quantity, and from the smallness of its quantity drying about the edges of the nostril, and so presenting some appearance of stickiness, will in a few cases remain after severe catarrh, and especially after the influenza of spring; and these have gradually assumed the character of glanders, and more particularly when they have been accompanied by enlarged glands and ulceration in the nose. Here the aid of a judicious veterinary surgeon is indispensable: and he, perhaps, will experience considerable difficulty in deciding the case. One circumstance will principally guide him. No disease will run on to glanders, which has not, to a considerable and palpable degree, impaired and broken down the constitution: and every disease that does this will run on to glanders. He will look then to the general state and condition of the horse, as well as to the situation of the glands, the nature of the discharge and character of the ulceration.

The history we have given of the symptoms of glanders will pretty clearly point out its nature. It is an affection of the membrane of the nose. Some say it is the production of tubercles, or joint tumors in the upper cells of the nose, which may long exist undetected, and hard to be detected except by a scarcely perceptible running from the nostril, caused by the slight irritation which they occasion. These tubercles gradually become numerous; they cluster together, suppurate and break; and small ulcerations form. The ulcers discharge a poisonous matter which is absorbed, and taken up by the neighboring glands, and which with greater or less rapidity vitates the constitution of the animal, and is capable of communicating the disease to others. Other surgeons content themselves with saying that it is an inflammation of the membrane of the nose, which may assume an acute or chronic form, or in a short time, or very slowly, run on to ulceration.

The malady proceeds as we have already described it, but before its termination, becomes connected with farcy. Few horses die of glanders without exhibiting some appearance of farcy; and farcy in its latter stages is almost invariably accompanied by glanders; they are *different forms or stages of the same disease*.

There can be no doubt that the membrane of the nose is the original seat of glanders; that the disease is for a time purely local; that the inflammation of

the tubercles must proceed to suppuration before the matter is formed on which the poisoning of the constitution depends; that the whole circulation does at length become empoisoned; and that the horse is destroyed by the general irritation and disease produced.

Glanders may be either bred in the horse, or communicated by contagion. What we have further to remark on this malady, will be arranged under these two heads.

Improper stable management we believe to be a far more frequent cause of glanders than contagion. The air which is necessary to respiration is charged and empoisoned in its passage through the lungs, and a fresh supply is necessary for the support of life. That supply may be sufficient, barely to support life, but not to prevent the vitiated air from again and again passing to the lungs, and producing irritation and disease. The membrane of the nose, possessed of extreme sensibility for the purpose of smell, is easily irritated by this poison, and close and ill-ventilated stables oftenest witness the ravages of glanders. Professor Coleman relates a case, which proves to demonstration the rapid and fatal agency of this cause. "In the expedition to Quiberon, the horses had not been long on board the transports, before it became necessary to shut down the hatchways, (we believe for a few hours only;) the consequence of this was, that some of them were suffocated, and that all the rest were disembarked either glandered or farcied."

In a close stable, the air is not only poisoned by being repeatedly breathed, but there are other and more powerful sources of mischief. The dung and the urine are suffered to remain fermenting, and giving out injurious gases. In many dark and ill-managed stables, a portion of the dung may be swept away, but the urine lies for days at the bottom of the bed, the disgusting and putrifying nature of which is all concealed by a little fresh straw which the lazy horse keeper scatters over the top.

The stables of the gentleman are generally kept hot enough, and far too hot, although in many of them, a more rational mode of treatment is beginning to be adopted; but they are lofty and roomy, and the horses are not too much crowded together, and a most scrupulous regard is paid to cleanliness. Glanders seldom prevail there. The stables of the farmer are ill-managed and filthy enough, and the ordure and urine sometimes remain from week to week, until the horse lies on a perfect dunghill, while there is no delicacy to drain away the moisture, nor any regular pavement to prevent it from soaking into the earth, nor any water to clean even the surface, but the only instrument of purification is an old stumped broom.—Glanders seldom prevail there; for the same carelessness which permits the filth to accumulate, leaves many a cranny for the wind to enter, and sweep away the deleterious fumes from this badly roofed and uncalled place.

The stables of the horse dealer are hot enough; but a principle of strict cleanliness is enforced, for there must be nothing to offend the eye, or the nose of the customer; and there glanders are seldom found; but if the stables of many of our post-horses, and of those employed on our canals, be examined, almost too low for a tall horse to stand upright—too dark for the accumulation of filth to be perceived—too far from the eye of the master—ill-drained and ill-paved—and governed by a false principle of economy, which begrudges the labor of the man and the cleanliness and comfort of the animal; these will be the very hotbeds of the disease, and in many of these establishments it is an almost constant resident.

When speaking of the inflammation of the eye, and the effect of ill-ventilated stables in producing it, we remarked that the urine of the horse contained an unusually large quantity of hartshorn; that the litter wetted by it was disposed most rapidly to ferment, and that the gases extricated must be extremely prejudicial to so delicate an organ. It may then be easily imagined that the constant presence of those pun-

gent fumes, and the irritation which they would cause on that membrane which is the very seat of smell, must predispose for, and often generate a disease which is primarily an affection of this membrane.

Glanders may be produced by any thing that injures, or for a length of time acts upon, and weakens the vital energy of this membrane. They have been known to follow a fracture of the bones of the nose. They have been the consequence of violent catarrh, and particularly the long continued discharge from the nostrils, of which we have spoken. They have been produced by the injection of stimulating and acrid substances up the nostrils; and every thing which weakens the constitution generally, will lead to glanders. It is not only from bad stable management, but from the hardships which they endure, and the exhausted state of their constitutions, that post and machine horses are so subject to glanders; and there is scarcely an inflammatory disease to which the horse is subject, that is not occasionally wound up and terminated by the appearance of glanders.

Glanders, however, are highly contagions. The farmer cannot be too well aware of this; and considering the degree to which they often prevail, the legislature would be justified in interfering by some severe enactments, as they have done in the case of the small-pox in the human subject.

The early and marked symptom of glanders is a discharge from the nostril of a peculiar character; and if that even before it becomes prevalent, be rubbed on a wound, or on a mucus surface, as the nostrils, it will produce a similar disease. Glanders are not communicated by the air or breath. If the division between two horses were sufficiently high to prevent all smelling and snorting at each other, and contact of every kind, and they drunk not out of the same pail, a sound horse might live for years uninfected, by the side of a glandered one. The matter of glanders has been mixed up into a ball, and given to a healthy horse, without effect; yet in another experiment of the same kind, the poor animal died. The mouth or gullet had probably some small wounds or ulcers in it. Some horses have eaten the hay left by those that were glandered, and no bad consequences have followed; but others have been speedily infected. The glandorous matter must come in contact with a wound, or fall on some membrane, thin and delicate like that of the nose, and through which it may be absorbed.—It is easy then, accustomed as horses are to smell each other, and to recognise each other by the smell; eating out of the same manger, and drinking from the same pail, to imagine that the disease may be very readily communicated. One horse has passed another when he was in the act of snorting, and has become glandered. Some fillies have received the infection, from the matter blown by the wind across a lane, when a glandered horse, in the opposite field, has claimed acquaintance by neighing or snorting. It is almost impossible for an infected horse to remain long in a stable with others, without irreparable mischief.

If some persons underrate the danger, it is because the disease may remain unrecognized in the infected horse for some months or even years; and, therefore, when it appears, it is attributed to other causes, or to after inoculation. We would deeply impress it on the mind of the farmer, that no glandered horse should be employed on his farm in any kind of work, or permitted to remain for a day on his premises: nor should a glandered horse be permitted to work on any road, or even to pasture on any field. He may be capable of work for years after the disease has become undoubted, but mischief may so easily and extensively be effected, that the public interest demands that every infected animal should be summarily destroyed, or given over for experiment to a veterinary surgeon, or recognized veterinary establishment.

Our opinion of the treatment of glanders is implied in what we have just stated. There are a few instances of the spontaneous cure of chronic glanders, or glanders long established and slow in their pro-

gress. The discharge has existed for a considerable time; at length it has gradually diminished, and has ceased without medical treatment; but in the majority of these supposed cases, the matter was only pent up for a while, and then, bursting from its confinement, flowed again in double quantity; or if glanders have not reappeared, the horse, in eighteen or twenty-four months, has become farcied, or consumptive, and died. We view these cures with much suspicion; but even allowing that some have occurred, they are so few and far between, that our expressed opinion of the incurable nature of the disease, in the present state of veterinary knowledge, is scarcely affected. As for medicine, there is scarcely a drug to which a fair trial has not been given, and many of them have had a temporary reputation; but they have passed away, one after the other, and are no longer used. The blue vitriol and the Spanish fly have held out longest, and in a few cases, either nature, or these medicines, have done wonders; but, in the majority of instances, they have palpably failed. Where the life of a valuable animal is at stake, and the owner takes every precaution to prevent infection, he may subject the horse to medical treatment; but we indignantly object to the slitting of the nostril, and scraping of the cartilage, and searing of the gland, and firing the frontal and nasal bones, and to those injections of pepper and mustard, corrosive sublimate and vitriol, by which the horse has been tortured, and the practitioner disgraced. At the veterinary school, and by veterinary surgeons, it will be most desirable that every experiment should be tried to discover a remedy for this pest; but, in ordinary instances, he is not faithful to his own interest or that of his neighbors, who does not remove the possibility of danger in the most summary way.

Supposing that glanders have made their appearance in the stable of a farmer, is there any danger after he has removed or destroyed the infected horse?—certainly there is, but not to the extent that is commonly supposed. There is no necessity for pulling down the racks and mangers, or even the stable itself, as some have done. The poison resides not in the breath of the animal, but in the nasal discharge, and that can only reach certain parts of the stable; and it the mangers, and racks, and bales, and partitions, are first well scraped, and next scoured with soap and water, and then thoroughly washed with a solution of the chloride of lime, (one pint of the chloride to a pailful of water,) and the walls are lime-washed, and the head-gear burned, and the clothing baked and washed, and the pails new painted, and the iron-work exposed to a red heat, all danger will cease.

The tricks which some dealers resort to at fairs and markets, in order to conceal the existence of glanders, are most infamous, and should be visited with the severest penalty of the law. Having given the horse a brushing gallop, that he may thoroughly clear the nose, some of them blow powdered alum up the nostrils a little while before he is shown; others use white vitriol; and although the horse may be sadly tortured, about which they care nothing, the discharge is for some hours stayed. Others roll up a pledget of tow, and introduce it into the nostril, sufficiently high to escape common observation. Both these tricks may be discovered by the uneasiness of the animal, and his repeated efforts to sneeze, as well as by his general appearance, and if the disease be far advanced, most assuredly by the red or raw appearance of the nose, and by the stinking breath.

Happy should we be, if we could say any thing satisfactory of the prevention of glanders. The danger from exposure to infection can scarcely be avoided by those who travel much, and whose horses must stand in stables, the inmates of which are so promiscuous, and so frequently changed. Although we cannot prevent contagion, we have more power in preventing the disease from occurring without contagion, and that is a point of importance, at least if the opinion of Professor Coleman be correct, that not one horse in a

thousand receives the disease from contagion. To this however, we cannot subscribe, for not only the history of calvary regiments; but the experience of every breeder and proprietor of horses will prove the infectious nature of the complaint.

No fact is more certain, than that he who will keep a glandered horse in his stable, or work him in his team, will sooner or later lose the greater part of his stud. However, the generation of the disease may certainly be much prevented, and the first and most effectual mode of prevention will be to keep the stables cool and well ventilated, for the hot and poisoned air of low and confined stables is one of the most prevalent causes of glanders.

Next to ventilation stands cleanliness; for the foul air from the fermenting litter, and urine and dung, must not only be highly injurious to health generally, but irritate and predispose to inflammation that delicate membrane, which is the primary seat of the disease. If to this be added regular exercise, and occasional green meat during the summer, and carrots in the winter, we shall have stated all that can be done in the way of prevention. The farmer's horse in his cool or cold stable, and during the greater part of the year running loose when not at work, would be exempt from glanders, if at the market and fair he were not so much exposed to contagion. In truth, glanders may be considered as the consequence of the stabling of the horse. In South America and in Arabia they are unknown; but wherever the European plan of stabling has been introduced, glanders have followed in its train: and therefore if any means are resorted to for the cure of glanders, the first, and perhaps the only effectual one would be to remove every exciting cause of the disease; to restore the horse almost to a state of nature; to turn him out for a long time, or at least to throw open his stable as much as the season and the weather will permit.—Experience, however, tells us, that, although the symptoms have disappeared when the exciting causes of disease have been removed, and the horse has returned to his stable after a twelvemonth's run apparently sound, every symptom has gradually shewn itself again when these causes have been once more called into action.

(From the Genesee Farmer.)

LOSS IN FATTENING OXEN.

MESSRS. EDITORS: *Milton, March 22, 1833.*

For the benefit of others who are as ignorant of the comparative value of cattle, before and after being fatted, as I was until I had made the experiment, I am constrained to offer to you for publication this communication. My experiment was made with a yoke of large oxen, and commenced November 1st, ultima, when they were in good working condition. I will put down what I believe to have been their value at that time, \$75 00
They were fed 180 bushels potatoes, at 20c. 36 00
“ 10 “ corn, at 62½cts. 6 25
90 days at fodder and labor of feeding at 12½c. 11 25

Estimated cost, \$128 50
They weighed about 2000 lbs. for which I received 5 cts. 100 00

Making a loss of \$28 50

Although the oxen were large framed, they were not of a kind to fatten easily.

The above is not offered for publication, but with a sincere desire that it may warn others from my error.

Respectfully, W. P. W.

Note.—I am inclined to believe that farmers do not pay sufficient attention, in their selection of working oxen, to their fattening qualities. While oxen intended for the yoke command the same high price which they do at present, it seems quite important that they should possess properties fitting them for the stall as well as the yoke, in order that we may derive the greatest profit from them. W. P. W.

TURKISH HORSES.—Large apertures in the walls, and the roof constantly admitted the air, it being a principle with the Osmanleys to keep their stables cool, covering the horses with thick cloths. And, as no country presents more variety of climate than Turkey in Europe, no horses being so healthy as Turkish horses, it follows that the mode adopted with them is good—spacious, well ventilated stabling with plenty of body clothes. Horses in Turkey never stand on straw, but on the earth or sand, kept very clean and are always tethered. The practice of tethering is worthy of imitation every where; it does not distress the animal, and it prevents kicking. Nothing is more unpleasant than being between two rows of loose heels. “Extremes meet,” is exemplified in the contrary practice of the English and the Turks respecting horses the result of each being the same excellence. English stables are hot, Turkish stables are cold—English horses are high fed, Turkish horses get little else than chopped straw—it requires hours to dress an English horse; as many minutes suffice for a Turkish horse—the English snaffle would scarcely hurt a deer's mouth; the Turkish bit would break a tiger's jaw—the hoof in England is prepared to the shoe; the shoe in Turkey is fashioned to the hoof.

[*Slade's Travels.*]

MISCELLANEOUS.

(From the Genesee Farmer.)

SPRING AT BUFFALO—EMIGRATION, &c.

Thus far the spring has been uncommonly mild and forward, yet we have had very little rain. But one small shower has fallen on us for several weeks. The ice all left Lake Erie about the 24th April. May 8th, our plum and cherry trees were in full bloom. The wheat and grass in the neighborhood look well, but want more rain. The honey bees began to work about the first of April. The flowers of the willow, alder, and poplar, were then out; and I have never seen them carry in greater burdens of bread on their thighs, than during many days in April. Mine have made a large quantity of comb this spring, and considerable honey. The young bees are coming out very rapidly. There have been several young dead drones brought out of the hives. This appears to be uncommonly early for that operation. From present prospects, this promises to be an uncommonly fine bee season. Our fruit trees were never fuller of bloom, and the weather so far has been uncommonly good for them.

Never before has there been such a crowd of emigration to “the great west,” as during this spring.—It seems as though the whole eastern country was pouring out its millions for Ohio and Michigan. Ever since the 25th of April, two large steamboats have left Buffalo daily for Cleveland and Detroit; and every boat, together with all the schooners, and there are several of them which leave here every day, are literally packed down and overrun with passengers, goods, chattels, wares and merchandize; so much so, that in some instances passengers have been *pushed ashore*, to prevent the boat from being overlaid. Upwards of six hundred passengers have been taken from the wharf in one boat, this spring, at Buffalo. What a country must there be at the west; and how fertile its soil; and how mild its climate, to invite such a rush of inhabitants into its bosom! And the Dutch, too! they are beginning to come up the canal. It seems as if the whole country would be overrun with them. But they bring considerable money along, and buy out whole neighborhoods of farms. They are a queer race, however, and we might easily spare them for better folks. But so long as America seems destined to be the waste-wier, a grand receptacle of European overflow, we have little else to expect but a motley emigration.

I often think, while standing on the wharf at Buf-

falo, and looking at one of our fine large schooners, which are “up for Chicago” every week, as the crew are stowing away the bales and boxes of merchandise; and as numerous families, with cheerful and happy faces, are getting on board, with their luggage, to emigrate into those far regions; of the time, when, eight and twenty years ago, while a little boy at school, in old Massachusetts, with the American Preceptor in my hand, I used to read Andrew Ellicott's description of Niagara Falls, which it contained, (and an excellent description too it is;) and I then hoped that I should live long enough, and get rich enough, to some day or other go out into the wild wilderness and see those Falls! And I well recollect, with what thrilling interest I used to sit in my little chair by my parents, around the fire of a winter evening, and listen to tales of wonder about the “Genesees,” from those great travellers who had explored that distant country. And I well recollect, too, how all the neighborhood used to congregate about the house of a family who were “going to start” on their emigration to the “Genesee country,” or to the “Scioto.”—How their friends and relatives hung around them, and with tears and sighs of despair of ever seeing them again in this world, bid them adieu forever.—And here I am, a resident, standing on what was then almost the Ultima Thule of emigration, and witness families embark to go a thousand miles beyond us, into a new, yet partially settled country, with expectations of coming back again in three or four years at farthest, to see their friends in Maine, seven or eight hundred miles east of us; and all the way by water!

What a marvellous country do we inhabit, and what a spirit of enterprise pervades our land! Why, surely, the Americans ought to be the lappiest and most prosperous people in the world; and I truly believe they are. But to return to our emigration. I have this spring seen great numbers of good, substantial people from Ontario, Seneca, Livingston, and the central counties of Western New York, who are emigrating to the west with their families—more than I have ever known before. They say that they find no difficulty in selling their farms, and at good prices too. Does not this show a proud state of things for New York? Why are her farms sought for with such avidity? Why are lands around the lakes and canals, and in the extreme western part of the state worth, when well cleared and improved, twenty to thirty-five dollars an acre; when, even in New England, their best lands are hardly worth more? It is her immense internal improvements, and the great thoroughfares which have been opened through the rich interior, and by which she has been made the toll gate of the world, that has produced this result. Look at the immense tribute she annually receives from the other states. See the hundreds of thousands she accumulates from their travel and emigration; and what markets she thus provides for the surplus produce of our farmers. And how much is the value of her western lands increased by the cheapness of transportation on the canal! Our canal board did most wisely last winter, in lowering the price of tolls; and they will soon experience the fact, that low tolls will increase the receipts of her treasury; and that they ought to be farther reduced, down to the lowest constitutional limit; and even when at that rate, if the canal be not already choked up with boats, they ought to throw off all charges on the *tare* of goods, such as crates, boxes, casks, &c. with which they are encased, and only charge toll on the *weight of the naked article itself*. Then will our carrying trade be increased. Let the tolls be merely nominal—enough only to repair the canal and pay the interest on its debt—reduce the salt duty to six cents a bushel; afford it for the least possible price, and make three times the quantity now made—and then will be seen a state of things most gratifying: light burdens and full employment to our people. What is the paltry accumulation of a few thousands in our state treasury beyond its

most simple wants, to a vast business, and employment, and prosperity, given our citizens at large? It is of the least possible importance in comparison with their ultimate and individual prosperity.

But I am straying from my subject. I began with the spring, and have ended with a homily on canal tolls and political economy. But to return: Our season has opened upon us most auspiciously. The farmer, the mechanic, and the merchant, seem alike equally favored. May it so continue; and may heaven's choicest blessings cheer the husbandman on to his labors, and its richest bounties reward his toils.

ULMUS.

Prices Current in New York, June 8.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .12 a 15; Upland, .11 a .13; Alabama, .11 a .14. Cotton Bagging, Hemp, yd., .13 a .21; Flax, .11 a .15. Flax, American, 8 1/2 a 9. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a 5.62; Canal, 5.62 a 5.75; Balt. How'd st. 6.00 a —; Rh'd city mills, — a —; country, 5.62 a —; Alexand'a, 5.62 a 5.75; Fredericksburg, 5.62 a —; Petersburg, 5.62 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. — a —; Rye, North, .73 a .76; Corn, Yel. North, .75 a —; Barley, — a —; Oats, South and North, .38 a .44; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, 7 1/2 a 9.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1 1/2 " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenth Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK,
Amer. Far. Office.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life), is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,
Apr. 26—tf. Amer. Farmer Establishment.

HERBEMONT ON THE VINE AND WINE MAKING.

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1832, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13 1/4 and the other 13 1/2 hands high, and will yet grow three or four inches: their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to I. I. Hitchcock, American Farmer establishment, Baltimore. The price is \$600 each.

TO BREWERS, HORSE AND CATTLE KEEPERS IN GENERAL.

For sale, a Portable Mill for bruising Malt, Oats, Beans or Corn, and a Hay or Straw Cutter.

The above Machines were imported from England, and are constructed upon the most approved plans, and are in general use by the scientific in the above lines in Great Britain. They are left for inspection with Mr. James Brown, at his Oyster Hotel and Porter Establishment, southeast corner of Paer and Pratt streets, opposite the Three Tun Tavern, Baltimore.

Mr. Brown is authorized to sell the above machinery. Price, for the Mill \$50; for the Straw Cutter \$30. June 14. 11*

HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Seythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 do. Hay and Manure FORKS.

30 do. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, hung ready for use.

SICKLES, English and American Seythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them. May 24.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Apr. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is no change of consequence in the market. The wagon price of Howard street flour remains at \$5.37 1/2. The papers from the Eastern Shore speak of great damages done the crops by the long and heavy rains; but as yet this has had no effect on the market.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 5.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 394 hhd. Md.; 117 hhd. Ohio; 4 hhd. Penn. and 1 hhd. Ken.—total 516 hhd.

FLOUR—best white wheat family \$6 75 a 7.25; super Howard-street, 5.56 1/2 a 5.62 1/2; city mills, 5.75 a —; city mills extra 6.00 a —; CORN MEAL bbl 5 62 1/2; GRAIN, best red wheat, 1.12 a 1.18; white do 1.22 a 1.25; —CORN, white, 64 a 65, yellow, 65 a 66; —RYE, 68 a 70 —OATS, 37 1/2 a 41.—BEANS, 75 a 80.—PEAS, 65 a 70 —CLOVER-SEED 8.00 a —TIMOTHY, — a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50—Herd's, — a —Lucerne — a 3 1/2 lb.—BARLEY,—FALSFEE 1.50 a 1.62—COTTON Va. 11 1/2 a 13—Lou. 12 1/2 a 14—Alab. 11 1/2 a 13—Tenn. 11 a 12 1/2; N. Car. 12 a 13; Upland 12 1/2 a 13 1/2—WHISKY, hhd. 1st p. 28 1/2 a; —in bbls. 31 a 32—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 Hvar, Russia, ton, \$195 a 205. Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 37 1/2—Plaster Paris, per ton, — a 4.25; ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.40 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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TERMS.

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THE FARMER.

BALTIMORE, FRIDAY, JUNE 21, 1833.

HORTICULTURAL ADDRESS.—We are much indebted to the Committee of Arrangement for a copy of Mr. Kennedy's Address to the Horticultural Society at its late celebration. Our opinion of this production was freely stated in our last, and we need not now repeat it; but we cannot avoid requesting the reader's attention to it, being satisfied that no one can rise from its perusal without being edified by it.

AMERICAN NANKEN.—We have before us a beautiful specimen of American nankeen, made from nankeen colored cotton, raised by Mr. Forsythe of Georgia. The nankeen cotton was first raised in the south, eight or ten years ago, but was not then thought much of—as is the case with all new articles, it was with difficulty that persons could be found to try it. Mr. Forsythe has persevered until he has been able to induce the manufacturers to work up the raw material, and thus bring the article fairly into the market. The specimen before us, a piece of seven yards, is really beautiful; somewhat darker colored than the Indian article, and much superior to the miserable imitations from the English looms and dye shops. It being of the natural color of the cotton, it does not fade by wear and washing; and we are informed that Mr. Forsythe thinks the strongest mineral acids will not extract the color. This may be correct, but all vegetable colors disappear under the action of chlorine—and we shall take an early opportunity to test the fastness of the color of this article by the use of the chlorine, and other chemical agents. Mr. Nathaniel F. Williams, merchant of this city, agent for the sale of the nankeen, to whom we are indebted for an opportunity of examining it, informs us that a friend of his had accidentally got a large spot of ink on a new pair of pantaloons, which he considered had spoiled them. Mr. W. advised him to apply a little lemon juice and salt to the spot, and expose it to the sun, which was done, the ink extracted, and the color of the cloth remained unchanged.

We have thought it important to the interests of the southern cotton planters, that a knowledge of the value of this nankeen cotton should be disseminated, as the manufacture of nankeen will add to the consumption of the raw material. No one will ever wear the imitated article when they can get the genuine one. The color of the common imported nankeen disappears on the first washing, and clothes made of it are, therefore, very soon laid aside. We recommend a trial of this nankeen, and also the culture of the cotton, as an important object of attention to our southern friends.

SUN-FLOWER OIL.—This article is beginning to attract attention in the west. Messrs. Prouty & Co. of Whartons, Ohio, in a letter to the editor of the American Farmer, state that they are now engaged in the manufacture of sun-flower oil, and that they could forward to Baltimore eight or ten barrels immediately, if there was a prospect of its meeting a ready sale. Sun flower oil is used in York, Pa. in paints, in lamps and as a substitute for olive oil on the table. We use it, and prefer it on all occasions instead of olive oil. We would recommend a fair trial of it by the painters, and hope the manufacturers will not be discouraged by the want of a market.

THE GREAT GRAPEVINE.—The Newbern Spectator makes the following remark, on publishing the certificate of the number of bunches on Mr. Willis' Grapevine. The quotation from *Irenæus* is doubtless intended to ridicule the statement relative to the produce of Mr. W's vine, which the respectability of that gentleman renders gratuitous.

"Since reading the above, we are by no means so

incredulous respecting the vines described by Irenæus, Papias, and others, which are to gladden the hearts of those whose happy lot it shall be to witness the Millennium.

"The days shall come," says Irenæus, "in which there shall be vines which shall severally have ten thousand branches, and every of these branches shall have ten thousand lesser branches, and every of these lesser branches shall have ten thousand twigs, and every one of these twigs shall have ten thousand clusters of grapes, and in every of these clusters there shall be ten thousand grapes, and every one of these grapes being pressed shall yield two hundred and seventy-five gallons of wine; and when one shall take hold of one of these bunches, another bunch shall cry out: 'I am a better bunch, take me!'"

"Mr Willis may learn from this that there is yet room for improvement in the cultivation of this care-subduing fruit."

HORTICULTURAL SOCIETY.

At the general meeting of the Society, on Wednesday last, the following report of the committee on premiums was made.

The committee appointed by the Horticultural Society of Maryland to award the premiums offered at the first exhibition, beg leave respectfully to submit the following report:—

They congratulate the society that the duties of the committee of arrangements have been so ably fulfilled, and have been so successful as to have presented in this first exhibition of the Society, a display of fruits, flowers and plants, which not the most sanguine could have anticipated from the present limited means and resources of the Society. The benefits to be derived from the association have hence, at once been acknowledged, and the universal expression of approbation on the part of the community at this exhibition, has given a surety that every subsequent effort will be fostered and sustained. The committee have been fully sensible of the responsibility under which they have acted in coming to a decision in awarding the premiums on this occasion, a responsibility which will be considerably lightened on future occasions by particularizing the objects for which premiums will be given. Whilst they feel satisfied at the awards they have made, they regret that it has not been in their power to include other objects presented, which have received deservedly the commendation of visitors—nor has it been in the power of the committee, in the limited time which has been allotted to them by the society, to make particular mention of these objects—a full report of which will be hereafter prepared. In acknowledging the great deficiency in the quantity of vegetables exhibited, they have every reason to attribute this circumstance to the shortness of the time which has elapsed since the organization of the society and its present exhibition, a period which has not enabled the gardeners of our state generally to prepare fit objects. This will be obviated at the next exhibition, the premiums for which will be offered in the course of the present month.

The committee adjudge:

Premium, No. 1—A silver Cream Jug—value \$20—to Mr. Sam'l Feast, for raspberries, grown by him from seed. The fruit is of the most delicate kind, large, and of fine flavor. For the choice collection of exotics exhibited by this gentleman, the thanks of the Society are due. The heaths, especially, deserve notice, evidencing by their good appearance, the care and attention bestowed on their culture.

Premium, No. 2—A silver Goblet—value \$15—to Mr. John Feast, for his choice collection of *Pelargoniums*, and other exotics exhibited. To this gentleman in no less a degree are the thanks of the Society due for the rare and beautiful collection of plants exhibited, and for the care and attention bestowed on the culture of plants generally.

Premium, No. 3—Silver cup—value \$10—Mr.

Joshua Peirce of Washington, for his choice collection of lemons, oranges, citrons, limes. This collection attracted, and was justly entitled to much admiration.

Premium, No. 4—Silver cup—value \$10, to John B. Bastian, for a fine specimen of Montmorency cherry, and other fruits, and for a number of fine exotics.

Premium, No. 5—Silver Cup—value \$10, to Emory Genous, gardener at Druid Hill, seat of Lloyd N. Rogers, Esq. for three baskets of fruit, strawberries, raspberries and cherries—the strawberries, especially, were of the largest and best kind.

Premium, No. 6—Silver Cup—value \$10, to Thos. Dorsey, for the best specimen of vegetables.

Premium, No. 7—Silver Cup—value \$10, to Mrs. Isaac McKim, for the best gooseberries.

Premium No. 8—Silver Medal, value \$5, to Mrs. T. L. Emory, for a beautiful collection of Exotics.

Premium No. 9—Silver Medal value \$5, to Mrs. Edmondson, for a large basket of fine Oranges and Lemons, and a great variety of rare Exotics.

Premium No. 10—Silver Medal, value \$5, to Robert Sinclair, for a specimen of large Gooseberries, and various vegetables. The fruit varied in size with those which received Premium No. 7.

Signed, B. J. CHEN, Chairman.
HENRY SCHROEDER,
THOMAS EDMONDSON, Jr.
ZEBULON WATERS,
EDWARD KURTZ,
WM. G. THOMAS.

The list of premiums to be offered for specific objects during the ensuing year, will be published in the course of the month. The committees of the Council on fruit and vegetables will meet every Saturday morning between the hours of 8 and 9 at the Farmer Office, in order to receive and examine such objects as may be presented to them for their respective departments. It is to be understood that the premiums about to be offered in these two departments will be adjudged by the reports of these Committees.

By order of the Council,
H. F. DICKENET, Sec'y.

(From the Genesee Farmer.)

PRESERVING BEES IN WINTER.

MR. TUCKER: Bergen, Genesee, Co. May, 17, 1833.

I have seen several articles on the subject of bees in your valuable paper, the Genesee Farmer, and being a subscriber, I wish to give to the public the fruits of my experience. I have kept bees for fifteen years. Last spring a friend of mine told me if I would bury my bees in the ground I could keep them through the winter in that manner; accordingly I buried two hives that had but very little honey. I was confident that they would not winter for the want of food; I therefore thought I would try the experiment. I took them from the ground the 18th day of April, and found them in good health. They had not made use of the honey, as there appeared to be as much honey in the spring as when I put them in the ground. They must be buried below the frost, and in such manner as to prevent the air from coming to them.

H. D. GIFFORD.

On this subject, we find the following paragraph in the newspapers—where it originated we know not:

Preserving Bees in Winter.—Mr. Etheridge, of Montrose, Penn., who keeps a considerable quantity of bees, buried seven hives in the ground last fall by placing them on the ground, covering them first with straw, and then burying them in the earth to the depth of about ten inches. About the first of this month he took them out, and found them to be in excellent condition. Some of the hives when buried were poorly provided with honey, and Mr. E. is of opinion that they could not have been preserved through the winter in the ordinary way.

AGRICULTURE.

(From the Southern Agriculturist.)

ACCOUNT OF AN AGRICULTURAL EXCURSION.

Made into the South of Georgia, in the winter of 1852.

BY THE EDITOR.

(Continued from page 75.)

From "St. Simon's" we again visited "Hopeton," touching on our way at "Butler's" and "Champney's Island," both of which are of considerable size, especially the latter. The crops cultivated are rice, sugar-cane and cotton; the first is principally attended to, the two last being only in small quantities, so as to alternate a portion of the fields, and also to ensure some return for the labor expended on the plantation which is best secured by a variety of crops, especially where they are all valuable. Most of the river plantations near Darien are better calculated for the culture of rice than any other crop, especially the islands, yet a rotation is generally adopted, and by many is thought necessary to ensure a full crop of rice. A distinguished planter of that place gave it as his opinion, based on the experience of many years, that in the course of ten years nothing was lost, by introducing a crop of cotton every third year, even were the cotton to prove wholly unproductive, for the increase in the rice crop would fully compensate for the lost year, so that at the expiration of ten years, the product obtained of rice, would be equal to what it would have been, had the fields been kept solely under this culture. The cotton crops, therefore, are considered as clear gain. The rice-planters of South Carolina have not, we believe, introduced any other crop on their fields, owing to the greater value of this over any other which they could cultivate; but, if in the course of years, the product remain the same, although every third or fourth year is devoted to another, it would be worthy of trial whether a rotation of crops might not be advantageously adopted. An experiment of this kind might be made on a small field, or a square be devoted to this purpose. This alternation of crops, however, is not considered *by all* to be necessary to the successful culture of rice. Some believe that it can be done without, and others adopt it as a convenience.

Col. J. F. Green is of opinion that it is not necessary, he observes:—"There can be no doubt but an alternation of crops where it can be practised conveniently is highly judicious; but I do not think it at all necessary to ensure a good rice crop, if fortunately situated between the two extremes of salt and freshets. From the approximation we can make between harvesting and planting in placing the land nearly in the condition we should find it, after raising cotton, cane, or any thing else that required to be kept dry through the entire season, by having the fields properly ditched and ploughed, and kept dry from harvesting to planting. These are two necessary precautions that are little observed in this neighborhood, more particularly, perhaps, that of ploughing."

A few of the planters have of late years planted entire crops of rice, on account of the uncertainty of realizing a full crop of cotton from low lands. Some have substituted cane in lieu of cotton; but we did not find the culture of this plant extending. In fact, several planters were about abandoning it, in consequence of its requiring more labor in planting, harvesting and preparing it for market. Also the additional expense necessary to erect an efficient mill for grinding the cane, and building sugar-houses, &c. A majority of the rice planters, we understand, who cultivate the cane, prefer making syrup to manufacturing sugar, believing it to be more profitable, owing to the want of season to mature the cane, and the inefficient machinery for grinding the cane.

Some of the planters with whom we conversed, were of an opinion, that the cane crop on low land

was not as valuable as the rice crop, the product being small and the quality inferior. Mr. J. H. Couper has proved it to be otherwise, and both cane and cotton enter into a regular rotation on his fields.

The mode of cultivating rice in this neighborhood will be best understood by giving the practice of one or two of the planters. We will here give that of Col. Green, who cultivates an island immediately opposite to Darien, from which it is separated by one of the branches of the Altamaha river. These notes were furnished us by Col. Green, merely for reference, but as we cannot improve the account which he has himself given, we prefer making use of them as they are, rather than, by altering, lose any part.

"The island on which I plant is known as 'General's Island,' and contains about eight hundred acres of tide land. I have now under cultivation about two hundred and twenty acres. My negroes are settled on the main, from an impression that a low damp situation was not as congenial to health as a higher and drier site; and where better water could be procured for us, and, also, that there would be nothing risked by gales which do at times not only sweep off entire crops, but a large portion of the negroes. There is some risk to be run in daily crossing the river, and occasionally much exposure to rain; but of the two hazards, I prefer the latter.

"I prepare my land by having large and tight banks and tight trunks, and as soon as possible thoroughly drain, putting my drains parallel with each other, at fifty feet apart, from fourteen to eighteen inches wide, and not less than three feet deep. The inequality of the surface is generally so great that a drain shallower than that, will not dry the lower spots sufficiently. I think it important also, that the ditches and drains should be perfectly straight, and all stumps and roots perfectly removed so as to present no point on which floating trash may hang, otherwise barriers will soon be formed. When my fields are dried for harvesting, they are generally kept dry until again planted; the stubble will die with less cold, and more effectually when kept dry, than if suffered to be kept wet or even damp. As soon as the stubble will burn, fire is applied to it, and burnt as perfectly as possible; the earlier it is burnt the more numerous the birds are likely to collect on the fields, and in many instances the ducks also; and pick up what scattered rice may then be left on the surface, as it is perfectly exposed. I think it best to prohibit the pasturage of the fields to all horned cattle and horses. Rice-field butter is certainly very fine, but it is purchased at an extravagant price. The plough is introduced when the roots are sufficiently decayed to admit its use, (the Freeborn or Dagon plough I find best,) and the land is as perfectly turned as possible three or four inches deep; by which process, the rice which has escaped the birds is so late in getting up that it rarely ever overtakes the crop, and your crop invariably comes up free from grass. Some short time previous to planting, a heavy harrow with good iron teeth is passed over the ploughed land once or twice, until it is reduced sufficiently fine for trenching. I frequently use the trenching plough, but prefer the hoe, as it is neater in its execution; but the plough despatches work rapidly where you open three rows at once. I prefer my trenches shallow and not exceeding five inches wide, and about fourteen inches from centre to centre. In land thus prepared two bushels of seed is quite enough to the acre; in land not broken up by the hoe or plough, or on new land that is rough it requires to be planted thicker, say two and a half to three bushels per acre. I then flow from three to seven days, at first as deep as I can, to float the trash which should be taken off as quick and as clean as possible, the water is then reduced down so as to protect the higher spots of the field from the birds. The field is dried as soon as the rice is perceived to have sprouted pretty well, which never exceeds seven days, unless the weather proves very cold, but in no one case ought it to be kept flowed

deep long. I have seen whole fields of rice entirely rotted by deep flowing. This flow serves the double purpose of cleaning the field of small roots that may have been ploughed up, or particles of stubble or grass that have escaped the fire, and destroying insects that prove sometimes very destructive to a young crop. I disapprove of the point flow, except under peculiar circumstances: if the birds are very troublesome, and the land very level, the rice may be protected a few days from the birds, in the point. If the land should be unlevel, I think that more is sacrificed by this flow than would be lost by the birds. On the poor black soil that is frequently found on the main, adjoining the highlands, and which is invariably level, and from its peculiar soil, is very difficult to dry when once saturated, I would always advise the point-flow, and to be continued on from twenty-five to thirty days, the rice by that time attains considerable size, and most generally the field is perfectly clear of grass. The rice on this quality of land is less likely to become diseased by fox, rust, or spot, under this mode of treatment, than giving what is termed, the long flow, at the usual time. It will then require to be kept dry and hoed until it has formed the ear.

"But to return, as soon as I am done planting and the rice is up, I commence hoeing—at that period the work is light—the rice is so small that it must necessarily be hoed shallow, and there is no grass, and generally but few weeds to pick out of it, at that early season. Every tolerable good land is able to hoe a half acre with ease. I prefer to hoe twice before I flow, if I have time. This depends also much on the tides, as lands that are not old and much worn cannot be flowed generally but on spring tides. This is known as the long flow, and the use of it requires as much or more discretion in the planter than any other point in the cultivation of the crop. When the water may be changed in eight or ten days, and the atmosphere is moist and calm, it will flourish for thirty days; but if on the other hand, the weather should be dry and cool, and the tides too low to allow a change of water on the fields, I have seen the plant show indications of disease in ten days. I would recommend, under such circumstances, to dry the field and hoe deep and thoroughly as soon as the land is sufficiently dry. The object is to keep the plant in as healthy and growing condition as possible. Hence it becomes necessary to change the process of culture with it—if disease appears while it is dry, flow, or if when flowed, dry.

"As a general rule, the long-flow is kept on from fifteen to twenty days. I prefer flowing shallow unless the fields had not been properly cleared of trash in the previous flow, or it should have become much infested with weeds previous to hoeing; in such a case the water should be put on deep to float the trash or weeds, but under no circumstances ought it to be suffered to remain under this deep flow beyond three or four days. Whilst the rice is under this flow, it is advisable to have the higher spots in the field hoed and picked clean of grass. The first hoeing after this flow should be given as soon as the land is sufficiently dry, which, if properly drained, will not require more than a week, and be hoed deep, not less than two or three inches, and the surface well broken—care should now be taken that all the grass be perfectly removed. One-third of an acre is a pretty fair average for a hand per day to hoe at this time. If time admits, the crop should all be hoed over again, but hoed shallow, and what grass escaped at the previous working must now be removed; this is termed the 'lay-by hoeing,' and is light labor—a half to three quarters of an acre per hand per day. The crop is now supposed to be made, and requires nothing more but to be flowed and the water changed as convenient. The interval between the two last flowings is generally about six weeks, and by the time the rice has received this last flow, it has formed two, and if well grown, three joints. This flow should not be deeper than the long flow, until the rice ears

out, it is then advisable to flow deep to support the plant and keep it from lodging or falling. Seven acres of rice may be cultivated to the hand, if on a good pitch of tide, when once properly ditched with the assistance of ploughs and harrows to aid in preparing it for planting, or five acres of rice and two acres of provision, and unless the proportion of potatoes should be very small, I would prefer the seven acres of rice as the lighter labor.

"The crop of rice, as an average crop for the entire rice-growing-country, is greater than in South Carolina per acre, from the comparatively large amount of new land, and the system of alternating the fields; but the amount planted per hand is small compared with the usual amount planted in South Carolina; it does not exceed four acres, and in many instances, is much below it. The mode of planting and culture also differs widely from that pursued in South Carolina; the rows are wider apart, say eighteen inches from centre to centre, and I believe never exceeding one and a half bushels of rice, planted to the acre, and I believe five pecks per acre is about the medium. Very little water is used in cultivating the crop previous to its jointing, and never, as far as I am aware of, used as an agent to destroy the grass; this renders it necessary to hoe oftener, and adds to the labor of keeping the crop clean; and I believe deteriorates the quality of the rice. I would estimate the average rice crop of this neighborhood at fifty bushels per acre. I am perfectly aware that many persons will doubt this as being too low an estimate; be it so, I will then, to convey my idea, say it is twenty per cent. greater than is made usually as an average crop on Sam-Pit, Black River, Pee Dee, or Waccamaw. I know the proneness in planters and overseers to over estimate the real amount of their crops. I do not think that more than forty bushels per acre is made on an average on those rivers. Here and there a solitary planter makes sixty bushels per acre, or occasionally a solitary field may make it; but that would not be a fair estimate of the average crop of the district for a succession of years."

The management of this crop on "Butlers' Island," has already been given in Vol. i. p. 409 of this Journal, and we refer our readers to it for further information. In our account of "Hopeton," we will give the mode of culture pursued by Mr. J. H. Couper, which with what we have already given will convey a tolerably correct idea of that pursued by the planters generally in this section of country. Although there are many islands in this river, and the borders are swampy, yet, there is, comparatively, but a small portion which is well adapted to the culture of rice. The right pitch of tide does not extend more than three miles, commencing at "Hopeton," and terminating with "Champney's Island," above the former the crops would be extremely uncertain from the liability to injury from freshets, and below "Champney's Island," the salt water would occasionally prove an unwelcome visitor. But even the whole of the space between these two points is not occupied, and there is much fine land yet to be brought under culture. The river here is very wide and divided into several large branches. Most of the islands are still in a state of nature, thickly wooded, and apparently of great fertility; but they are all more or less liable to be overflowed by freshets, for although the river has numerous large branches and several out-lets, yet owing to its great length, and the tributary streams which flow into it, freshets are not uncommon, and are sometimes very destructive.

A peculiarity we noticed here, and which is common in this state, is to regulate all the operations of the rice crop by the spring tides. All of their work is done in reference to these, whether it be planting or hoeing, for it is only at these periods that they can flow their fields; consequently, if they are not prepared, they must wait for the next. They, therefore, endeavor to have certain portions of their work completed by that time—certain fields planted, cer-

tain fields hoed, &c. There is not (owing to this cause) all the precision which is to be found on the Carolina plantations, nor can science be as effectually brought to aid the planter; for whilst with the Carolina planter, each operation is governed by the particular state of the crop, and water is put on or run off as may be required, the crop hoed, and kept dry, or flowed, as may be thought most conducive to its health, the Georgia planter is obliged to wait certain periodical flowings of the tides, which must operate against him in some degree, although, he can regulate his work to meet them in most cases, as these intervals are short. The average product of rice per acre on this river is greater than in Carolina, owing to the causes stated by Col. Green. We heard of several instances of four barrels being made to the acre.

(To be continued.)

(From the Virginia Farmer.)

AGRICULTURE IN VIRGINIA.

As it is the duty of every friend of agriculture to write in the advancement of this noble, yet neglected subject, I have determined to respond to your inquiry with regard to its decline in our state, and as to the means by which we may hope it will be improved.

Our injudicious system of husbandry, and its inevitable consequence, the excessive impoverishment of our soil, obvious and universal as they unquestionably are, may be attributed to various causes;—None of them, however, either in their origin or effect, beyond the control of that intelligence and perseverance, which are essential to success in all the various pursuits allotted to man. In ascertaining the defects of our present mode of cultivation, it may be well to examine the sources from which they have sprung. Most of them have been bequeathed to us, with our paternal inheritance; and whilst we have enjoyed the latter, we have but too generally adhered to the former. Among the most prominent allurements to an exhausting system of cultivation presented to our ancestors, may be esteemed the very great facilities afforded them, of procuring sustenance. The slight and alluvial soil found on the margin of our water courses, producing almost spontaneously abundant crops of corn and wheat, aided by the fish and fowl of those streams, removed all incentives to the energy and attention of the practical farmer. Another cause of almost total inattention to the preservation of the soil, was the strong inducement offered by the certainty of procuring another subject on which to work, by means of new clearings. Land being very cheap, the farmer who had exhausted his fields by unremitted tillage, and unlimited pasturage, found, in a resort to the *virgin mold*, a method of remedying the defects introduced by his former bad cultivation, at once expeditious and congenial to his taste. Thus thousands of acres, which by judicious management, might have been preserved as fruitful as in their original state, were rendered barren. The frequent incursions also, of those hostile tribes by whom the first settlers of our country were surrounded, presented no inconsiderable obstacle to a uniform system of farming, as the reward of labor was thereby rendered uncertain, and the regular employments of the yeomen of our country, were frequently interrupted by the call to arms. Another cause most adverse to agricultural improvement, is the extensive culture of tobacco. To this, perhaps more than any thing else, may be ascribed the rapid impoverishment of the eastern and southern sections of our state.—Those best acquainted with this crop, will be most able to appreciate the correctness of this assertion, as the experience of each year must render them more aware, of the continued destruction of forest land, the monopoly of all the manure on the farm, and the exclusive attention and extravagant quantity of labor bestowed on this crop.

To the fact of the far greater proportion of the landed property of our state being held by comparatively few persons, may likewise be attributed many

of the agricultural errors prevalent among us. The result of this distribution of land was, that the possessors of these estates, unmanageable from their great size, paid but little personal attention to them, depending generally on mercenary agents, who felt no interest in the improvement or even preservation of the soil, and whose sole object was to obtain the utmost degree of production from the estate, during the period of their occupancy, seldom bestowing a thought on its future condition, when the time should arrive for them to be superseded by others of the same class, who, by bringing a still larger portion of land under this wretched system of cultivation, sought at once the making their own fortunes, and satisfying the demands of the proprietor. Last, though not least, of all the evils with which our state has had to contend, in an agricultural, no less than a political point of view, has been our laboring population. To procure the requisite quantity of effective force, we maintain a considerable proportion of those who are totally useless, either from age or other circumstances, and the most valuable acquire for their support, a very considerable supply of those articles of consumption,—for example, corn and bacon; which, in their production, operate most injuriously on our lands.

Having thus investigated some of the causes, which most certainly and manifestly impaired the fertility of our country, let us now look to the means by which we may hope to effect a change in the aspect of our affairs. First, I should say, that improvement must be an object of primary importance; that system of cultivation is radically defective, which does not tend unvaryingly to this object. We may lay it down as a rule, universal in its application, that if our lands are not improving, they are declining; and we are constantly either increasing our real capital, by the enhanced value of our soil, or lessening it by the deterioration thereof. A small degree of observation and reflection, must convince every man of this.

Agricultural improvement has already commenced, and, we may reasonably hope, that its progress will be more rapid each succeeding year. Of all the causes, to which this may be ascribed, one of the most obvious, is the gradual division of property among those who feel a personal interest in it,—expecting to derive from it support for themselves and their families, and who will therefore bestow upon it that attention which will reasonably ensure success. Much of that talent and energy which have hitherto been exclusively devoted to literary professions, will be employed in ascertaining why disappointments in agriculture so frequently occur? The sources of these will be discovered, and the remedy applied. Analogy and experience both sustain this opinion. In the operation of nature, no less than in those of the mechanical arts, effects flow from causes, the connection may not be so apparent, but it is as inseparable. A substitution of ameliorating crops, combined with such a distribution of manure, as will benefit our lands generally, will be attended with the best effect.

From the application of science to agriculture, we may entertain the most lively hopes. Need I do more in confirmation of this opinion, than refer to the unprecedented improvement which has been produced in the eastern part of our country by the use of marle; and in the middle and western, by gypsum and clover, crops have been doubled, and the fertility of the soil, instead of being increased in a proportion at least equal to that of its production. As another illustration of this principle, I would mention the fact of the smut being completely arrested in its progress; an evil which at one period threatened the wheat growing sections of our state with the most disastrous results. It is needless to multiply examples.—The day is not far distant when conviction will supersede skepticism, and we shall exhibit in our exorbitant crops and verdant fields, husbandry, worthy of the Old Dominion. Such, at least, is the hope of

A FRIEND TO AGRICULTURE.

HORTICULTURE.

ADDRESS

Delivered before the HORTICULTURAL SOCIETY OF MARYLAND, at its First Annual Exhibition, June 12, 1833,—BY JOHN P. KENNEDY.

Ladies and Gentlemen of the Horticultural Society:

I hold it an undeserved favor that you have selected me to make the address on the occasion of the present celebration. Though not wanting in a just estimate of the worth of the objects of this society, nor of the efficiency of the means in your power to accomplish them,—nay, not less imbued, I trust, than any of you, with a lively hope to see the institution which you have lately organized fulfil its destined purpose, and shed its manifold beneficent influences upon our community, yet I cannot but feel that there are many gentlemen amongst you, whose active zeal in this enterprise, whose peculiar study of the pursuits to which it is allied, whose intelligence, taste and scholarship might have directed your regards to them, much more appropriately than to myself, when you were about to appoint an individual to recommend in public discourse the excellent aims for which you have associated. In allotting this duty to me, therefore, I must be permitted to esteem it a personal token of your consideration, for which I am bound to make you a grateful acknowledgment; and I desire to add to this expression of my thanks, the avowal that the task you have set before me is one which I take an especial pleasure in performing. I approach it with a cheerful resolution, because, in the first place, I feel assured that the same friendly concern which impelled you to put this duty upon me, will indulgently overlook the necessary imperfections of my performance; and, in the second place, because the subject itself is full of agreeable appliances and pleasant topics. I address you in the midst of a wilderness of sweets, where the eye has been delighted with the most exquisite of nature's forms and colors, developed in her choicest flowers, and where the air is redolent with the odor of a thousand perfumes: the treasures of the neighboring gardens have been spread around you in a splendid array of rare and luxuriant productions: this hall has been transmutated into a charmed grove, where one might fancy some unearthly enchanter had wrought his spell to delight the senses with all the riches of shape, hue and fragrance:

"Ten thousand colors wafted through the air,
In magic glances play upon the eye,
Combining in their endless fairy forms
A wild creation."

Around you, participating in this banquet of delights, are gathered your friends and neighbors, all joyous as yourselves, giving and receiving the quick impulse of pleasure engendered by the scene, and, by the sympathy of mutual satisfactions, quickening, enlarging and renewing the cheerfulness of this festival. Here, as if in rivalry with the delicate perfections of this congregation of plant and flower, are grouped about us the not less brilliant assemblage of our fair townswomen, of whom it is no flattery to say that their far-renowned beauty is the least of their attractions. Their presence here is an auspicious omen for the success of your undertaking. Where they delight to come, we may assure ourselves that the graceful genius of their sex will infuse into the labors and observances of the place the predominating flavor of their own sensitive and refined taste. This hall of flowers should be peculiarly their temple; and we would fain hope that at each return of this celebration we may find the pursuits and labors of the society applauded, promoted and sustained by the increasing zeal with which the ladies of Baltimore devote themselves to its prosperity. Then, too, the season of the year at which we meet lends no small share of allurements to the festivity of this ceremony. Spring has just fallen into the arms of summer: the freshest green is on

the fields, the deepest shade is in the grove: the balmy air breathes of rural enjoyment: fruits and flowers are found united in the gardens; and all that spring can furnish of the beautiful is mingled with much that summer can supply of the delicious. The physical frame of man is yet unexhausted by prolonged heats; the timely and frequent shower yet refreshes the face of earth, and no parching drought at this season deforms the landscape: Vertumnus has successively discarded his various disguises, and has won the prodigal Pomona, and Flora is close in the train of the wedded pair. This may, therefore, be emphatically called the season of delight and beauty.

From all these causes, I may truly say my theme is full of agreeable topics, and that to descend on them, as is my province, is more of a recreation than a task. Would that I were able adequately to express the emotions which the contemplation of these subjects raises in my mind!—that I were able to excite in your breasts the keen sense of enjoyment with which my own is moved in the discharge of the duty to which your kindness has called me!

This is the first public exhibition of the society. It is an experiment upon the taste and feeling of this community; and from the general and favorable interest which the endeavor has won, I think it can scarcely be deemed an experiment of doubtful success. If the event be prosperous, it will furnish a gratifying evidence that the citizens of our state have arrived at a wholesome elevation of moral and intellectual refinement.

Every stage of society, in the progress of man from rude and unpolished life up to the extreme of civilization, is distinguished by its appropriate character. In the first or earlier eras, we may see him struggling, with unassisted strength, for the mere rough materials of subsistence: a little more advanced, we shall find him diligent and inventive to enlarge the number of his comforts: still further on his career, his history will present him in search of superfluities;—the elegancies of life will then engage his pursuit, and he will be assiduous to accumulate what may adorn and illustrate his condition: passing forward beyond this stage, his high-fed desires and stimulated passions scorn the wholesome aliment that previously made him happy, and he will covet far-sought enjoyments; his taste rendered vicious by satiety, difficult to please, adulterated and sickly, will only be content with the gratifications which are to be procured at the greatest cost, and with the largest and most perilous expenditure of labor. Such, in brief, is the march of humanity;—and thus do the wants of that restless, changeable creature man provoke him to pursuits and attainments which severally give a sign or character to the manifold varieties of human society, from the day of the untrilled savage, to that of the frivolous and effete voluptuary.

I need not say, that the middle degrees on this scale are the most healthful and the most happy:—they unite the hardihood and endeavor of primitive society with the refinement of the elder changes—alike removed from the vices of both.

It is worth observation that in the infancy of social existence man works alone. He works at odds and disadvantage with his adversary want: his young invention has not yet supplied him with implements: a bare right arm, braced by toil and brawn by use, is the weapon with which he goes forth to do battle with hunger. The skin of the conquered Neimian lion is the only garment of this Hercules; and with no other assistance than that of his club he destroys the wild boar of Erymanthus, and drags up the triple headed Cerberus to the light of the sun. His is the victory achieved by brute force, and with many an agonizing strain of the muscles; and when he prostrates his giant enemy and sets his foot upon his breast, he dashes the drops from his brow, as one who has gained the day in a mortal encounter. It is not long, however, before he finds that his fellow man may be made an efficient instrument in this war with neces-

sity: that a combination will avail more than separate and unconcerted struggles;—and with this aim he subdues his brother and enlists him as a co-laborer. Then he discovers further, that working with associated mind, as well as with united strength, increases his power an hundred fold. This important secret of association is no sooner carried into use than the whole surface of human existence changes: improvement rapidly follows on the steps of improvement; useful things abound; comforts, luxuries, elegancies spring up like magical creations: life moves upon multiplied springs and wheels: the work of hands grows to be insignificant, when set beside the work of minds that have seized upon the great engine of nature. Wind, and water, and fire, and vapor are brought into tremendous alliance;—and man, the dwarf, becomes an irresistible giant, and smiles at the marvellous speed and overwhelming impetus with which his omnipotent machinery produces whatsoever his genius directs.

The same sense and insight, that has taught us the value of this power of combination of individuals for the procurement of things indispensable, also instructs us in the usefulness of association for the procurement of things that belong to the luxury of life; and it is accordingly a characteristic of this age, remarkable beyond all former precedent, to build up societies for the encouragement and improvement of the elegant arts. It is a good sign to see a community arrived at that point of moral culture and education at which the people think of establishing these institutions. It speaks of the taste, the refinement, and the virtue of the nation. It tells of the abandonment of the rudeness of unfurnished and unlettered society, and of the substitution of intellectual pleasures for gross and sensual indulgences. It shows us that sober and intelligent industry is attaining its great and glorious aim; that it is arriving at its healthful maturity, and is producing the fruits correspondent to the nature of the seed; that it is making a sound, happy, enlightened nation,—such as all wise founders of states have pictured to themselves when they have laid the foundation of empires. It is good, therefore, to see a people bestow their care upon a liberal support of painting, statuary, architecture, music, and all the other arts which adorn the condition of society.—Amongst these other arts, that of planting seeds and tilling the earth, for the sake of fruit and flowers, holds a place full as high, as worthy, and as excellent as any in the catalogue.

The citizens of Baltimore and its neighborhood have, for many years past, been distinguished for the productions of their gardens;—at least in that most useful department concerned with the cultivation of vegetables and fruits for the table. The climate of this region is eminently favorable to this culture.—Our central position, or middle latitude, enables us, with no great expense or trouble, to rear the plants native to either extremities of this country. We have a soil which, though light, is warm and kindly, and readily submits to the labor of the husbandman. We have sheltered valleys, where the fierce north wind is denied approach; and we have low lands bordering on our river, where the winter is sooner compelled to dissolve his icy fetters, and release the struggling germ from his grasp, than is common to the more elevated table lands westward. Our vegetation, therefore, is earlier, and more easily protected, immediately in this vicinity, than almost on any other spot lying along the same parallel of latitude. These causes have operated to give us good gardens. They have been greatly assisted,—in fact, we may say, these advantages were first shown to us,—by the French emigrants from St. Domingo, who, some thirty years gone by, were exiled by the domestic troubles of that island; and who fortunately selected this city as their asylum. That useful and worthy class of refugees brought with them an invaluable gift to our people—the knowledge of plants and garden stuffs. They were a frugal and industrious race of men, whose

calm and philosophic resignation to misfortune taught us a moral lesson scarcely less valuable than the physical boon with which it was accompanied. Many of them had been affluent, had lived in the abundance of their tropical climate, and, in accordance with the simple and healthful habits of their nation, had accurately studied all the processes of horticulture, and drawn their chief luxuries from that pursuit. They had been despoiled of their wealth; their homes were subverted; and, with the few household relics which haste allowed them to snatch up, they fled before the pursuing war, and reached our shores in safety. On their arrival here, they soon became aware of the value of this position for gardens, and many persons, now within my hearing, will doubtless remember the rapid improvement which took place in the supply of our markets. Almost immediately from the date of this event, Baltimore became distinguished for the profusion and excellence of the fruits and vegetables which supplied her tables. Since that period each coming year has added some new bounty to this valuable resource; our gardens multiply to the full measure of our increasing demand; new plants have been introduced; and an eager emulation has been active to furnish these healthful stores of comfort in the richest variety, and largest abundance.—The poor emigrant has past to the tomb; his generation have become mingled in the mass of our citizens: his humble name may even now be forgotten; but his great and priceless gift survives as a monument of his usefulness, which, although it may not have the glory of the storied urn, nor the splendor of the sculptured column—no, nor the tribute of the deathless page to make it intelligible to posterity, has, nevertheless, an equally honorable claim to the respect of the wise and the good, as a perpetual though silent benefaction to the country.

It is not long since an Agricultural society was established in this state. Its chief object was to promote inquiry and increase of knowledge, in reference to the more extensive concerns of farming. It looked to the production of the crops of grain, the cultivation of grasses, and the improvement of the breed of cattle; in fact, generally to the augmentation of the wealth of the husbandman. I recall this society to mind, that I may appeal to the experience of all who have attended to the impression it has made, for proof of the value of such associations. Our farmers in general, are a highly intelligent race of men, skilled in their particular pursuit, and careful of their own interest, and may be said to have possessed the means of improvement and the disposition to use them, without the aid of societies, as largely as any class of men in any country. Yet it requires no closeness of observation to see how much agriculture has been improved by the labors of this society; what emulation has sprung up to enlighten those who are ignorant, and to extend the field of knowledge for the learned; what valuable additions have been made to the implements of husbandry; what incalculable benefits have been conferred upon the country by the importation of new stocks of cattle; and, above all,—I mention it because the youngest individual in this hall may recognize the fact,—what signal advantages we all have enjoyed in the increased abundance and excellence which has been given to the products of the dairy. It is a pleasant thing to compare the present day with the day that is gone. It is pleasant to live in a country whose condition is ever on the rise; and to see our neighbors, kindred and friends, day by day, growing more comfortable, contented and affluent; to witness the nation growing rich in the substantial blessings of life; the rich man of yesterday made richer to-day, and the poor man of an earlier date brought to the conveniences and comforts of the opulent. It is pleasant to see how marvellously luxuries have grown cheap by the invention and skill of man; and things that were deemed superfluous in one age, converted by the general elevation of society, into the common necessities of the next; to see that which was once the peculium

of the wealthy, by the magic of man's productive skill, brought within the reach of every industrious laborer. These things are pleasant to be thought of; and they make the heart of the patriotic man glad when he reflects that they belong to his country: they make the heart of the religious man thankful, when he remembers them as the blessings of Providence: they spread cheerfulness and content,—the richest of earthly blessings,—over the whole people: they enliven the carol of the ploughman: they brace the sinews of labor, and rob toil of its fatigue: they light up the countenances of the poor; and they make it a happy and enviable thing to the stranger, to have a heritage in this land.

Such may be said to be a picture of our country through the last twenty years. This has resulted, in part, from the natural increase of population and wealth, inevitably incident to a fruitful and peaceful territory, but in great part, also, does it result from the assiduous effort made by individuals and societies to promote the knowledge of the arts necessary to make a nation prosperous, and especially of the arts of husbandry. The press has liberally devoted its influence to the support of this effort. Periodical papers have been ably edited, and munificently encouraged to disseminate science far and wide; the best pens have been employed to make this knowledge common; the air, if I may so speak, has been filled with the philosophy of useful things, and men have absorbed instruction almost unconsciously to themselves. They have caught hints from almanacs, wisdom from the fleeting sheets of a newspaper, precepts from proverbs, and good from all.

In this progress upon the career of improvement our community have arrived at another stage. That stage is indicated by the establishment of the Horticultural Society. The cultivation of fruits, vegetables and flowers no less demands the fostering care of societies, than the larger concerns of husbandry; indeed, from the variety of subjects which this pursuit embraces; from the minute character of its details: from the comprehensive knowledge which it requires; and more especially, from the want of familiarity, in the great mass of our citizens, with the endless processes of this cultivation, it would seem, more than most other pursuits, to demand the aid of intelligent societies, earnestly devoted to publishing the secrets of the knowledge upon which it depends. It invokes the assistance not only of the practical gardener, but of the attentive and astute naturalist; it is concerned not only with the subjects to which our domestic observation has grown habituated, but looks abroad into every quarter of the earth; it explores the treasures of every climate; it studies the properties of every soil; it investigates the peculiarities of every plant; it collects the experience of every people. It is careful to make that vegetation perfect and fruitful which nature has thrown before us in a wild and rugged strength, and to which she has given the promise, that by the nurture of man its fruits should be made abundant; it is skillful, by the arts of grafting and culture, to produce new and endless varieties of species; it is diligent to naturalize and domesticate the rare and valuable productions of distant climes; in short, it brings into the circle of a distinct science the knowledge of interesting facts scattered far and wide over the large surface of nature. The want of a society adapted to this kind of investigation would not begin to be felt until the improving taste of the community, guided by the laudable zeal of public spirited individuals, should take a direction towards the elegant luxuries of the garden. That this taste is growing up amongst us, is abundantly manifested by the zeal with which this first celebration of the Maryland Horticultural Society has been sustained; it is displayed in the rich and rare productions which have been shown for two days past in this hall; it is illustrated by the lively and eager interest of the respectable and intelligent crowds, who, to-day and yesterday, have mingled in this festival of flowers.

There are already several such institutions on this continent, some of which have been in the full career of usefulness for many years past. Their impression upon the people, amongst whom they have been established, has invariably been beneficent; we follow in their steps, imitate their example, and aim at the same good. This society scarcely numbers, as yet, six months since its creation—indeed, the present occasion may be said to be its first announcement to the public—and it is a cheerful and grateful subject of reflection to the patriotic gentlemen who brought it into existence, that their fellow townsmen have so quickly responded to their laudable purpose, and that they have already enlisted the support of upwards of a hundred members. Their little academy promises to spring up to a quick and sturdy maturity, and to win the universal regard of every liberal and enlightened friend of useful knowledge.

The design of every well regulated Horticultural Society, is two fold. It is first, to explore and develop the useful properties of plants; and, secondly, to supply the means of procuring and multiplying the rare and beautiful vegetable productions of nature.

The first department is a large one. It is concerned with the nurture and distribution of that large class of fruits and vegetables, which the provident source of all good has scattered over the face of the earth for the support of his creatures. There is not a climate so fierce, from the inhospitable and howling wilderness of the Arctic—from the far extremities

“— of Norumbega and the Samoed shore,”

down to the

“— utmost Indian isle Taprobane,”

—there is not a barren rock so cheerless, nor a strand so bleak, but that the bounty of heaven has domesticated on it some plant whose substance will furnish subsistence to the living things that there inhabit.—We have brought, from far and near, into our gardens many of the choice dainties which God has bestowed upon the prolific earth: the fruits and vegetables, with which we are conversant, are but few of them native to the soil on which they grow;—the care of man has long ago visited them in their remote homes, and he has preserved the seed, and spread them, in inexhaustible abundance, over all the habitable places of the globe. By an admirable provision of nature they possess the invaluable quality of self-naturalization, and readily adapt themselves to almost every variety of climate where man himself attains his physical perfection. There yet sleep in the solitudes of nature many an unknown weed, whose esculent virtue the prying eye of science has not yet discovered;—they will there sleep in undisturbed obscurity, until the frequent excursions of individuals and societies, impelled by the noble ambition of unfolding these vegetable treasures to the light of day, shall invade their hiding places, and give their humble worth its due share of the esteem of mankind. This enterprise is now busily on foot, and year after year the votaries of knowledge are enlarging their catalogue of the bounties of earth.

Not less important, on the score of usefulness, are these investigations when they are directed to the search after the medicinal virtues of this vegetable creation. The pharmacopœia of medicine is indebted to the labors of the horticulturist for its most valuable ingredients. How many a pain has been assuaged, how many a dreadful hour of suffering averted, how many a life preserved by the simple physic of the garden! Scarcely a plant that puts forth its modest leaves beneath the hedge, nor little root that twists its fibres into the borders of the garden walk, that is not a laboratory of priceless essences, for the relief of some of the countless ills that beset humanity. The power that ordained man to be the victim of feebleness and disease, as if compassionating his inevitable decay, and taking pity on his suffering, has garnered up in these humble cells innumerable speci-

fies, for the possession of which, in his moments of agony, the proudest monarch would barter his crown.

Nor is the excellence of the horticulturist's labor confined to the improvement of vegetation for food and medicine. It has much to do with the subject of affording shade and shelter to our habitations from the intense heat of the summer sky. We may learn by it how to collect and transplant trees; what peculiar attention they require; how their growth may be quickened and their health preserved to make them useful where they are placed. Connected with this subject, too, is a large field of valuable inquiry into the properties and character of our forest trees, with a view to the production of the best and most serviceable kinds of timber—a subject which at no distant day will claim a large share of the attention of our countrymen. The indiscriminate hand of the woodman has long been ruthlessly at work upon our forests, and has already destroyed the resource of great and important wealth to the nation. The diffusion of information on these subjects, may correct the mischievous undervaluing of the glories of our groves, and preserve to future generations a possession which their experience will properly estimate, if ours does not.

Let no one believe that these are frivolous or ignoble pursuits. They are fostered by the care, and upheld by the sillage of the wisest and best men in all ages. The most renowned and illustrious individuals have betaken themselves to the tilling of the earth with a peculiar sense of fresh and lively enjoyment, and in the hours of their brightest triumphs and busiest engrossment have thought of the pleasant earth and its prolific progeny, with a relish rendered keener by contrast with the pursuits of their ambition. It is no mean glory to be the first discoverer of a useful vegetable; nor is his fame to be despised who produces the familiar roots and plants of our gardens in the highest state of perfection. He who succeeds in bringing into existence a turnip or a beet which will weigh ten pounds, when these roots before were not known to exceed two, and who shall teach his countrymen how to repeat the process, confers upon mankind a benefit that should entitle him to a civic crown. He who, by his zeal and research amongst the stores of nature, adds another wholesome and nutritious vegetable to the supplies of the table, as fairly wins a claim to the gratitude of his country as the man who serves her in the senate or the field. The introduction of the potato into Europe, after the discovery of America, may be almost said to have created a distinct political era. It is not long since the tomato and the egg plant,—now classed amongst our most valued and delicious vegetables,—were first given to the people of this land. From whom this boon was derived, is a fact which has shared the obscurity and oblivion common to many of the noblest benefactions to our species. Its value, however, is attested by the universal favor with which it has been received. It has been said, by some impassioned epicure, that that man is entitled to the thanks of his country who invents a new dish. It such should be his glory, how much more signal should be the fame of the man who, by discovering a new and savory material, should lay the foundation of twenty dishes—who, instead of spending his genius upon another mode of combining and concocting the already known elements of good living, carries his research into the field of unexplored aliment, and brings into the kitchen some before unheard of, rich, flavorful and healthful nutriment.—What renown would await the gardener or the herbalist, who should succeed in transplanting to our soil, or who should discover in the mold of our forests that most boasted of all European condiments—that matchless and priceless flavorer of soups, pasties and ragouts—that most catchrestical dainty, of which it glorifies a man to be able even to speak in our country,—since it shows that he has had the benefit of the Trans-Atlantic tour—I mean the far-famed

truffle! Truly, that man's name should be well remembered! I can imagine with what sincere affection it would be lauded by the hungry man who sat himself down, for the first time, to a repast where this rare seasoner lent its flavor to the viands; how acute and pleasant would be the recognition of the man of nicely adjusted palate at the same banquet; how thankfully the invalid, with sickly and sated taste, would express his sense of the benediction when he found it reviving, stimulating and charming his jaded and capricious appetite. These, I repeat, although they concern our sensual enjoyments and furnish appliances to our baser desires, are nevertheless no mean glories. They contribute innocent allurements to beguile man from the knowledge of the weariness of his earthly pilgrimage; and they corroborate and fortify his body by giving him health and strength, and cheerfulness and content—the better to enable him to discharge these higher and more noble offices which belong to his condition as a thinking, aspiring, and accountable being.

To all such purposes the Horticultural Society is eminently subservient. It not only invites and persuades men to give their attention to the introduction of new vegetables; but it also teaches how those in use, native or naturalized, may be produced in the greatest abundance, with the least labor, and at the earliest periods of the year. It studies the nature of plants, their characters, their habits, the things and conditions congenial to them, and the obstacles that embarrass their increase. It teaches what distemperatures are incident to their growth; what signs attend their career, whether for good or ill; and with what profit these may be observed. In fact it builds up a beautiful system of georgics, which the philosopher may study with delight, and the practical gardener may pursue with advantage. It furnishes a fruitful source of emolument to the poor, and opens new fields for the employment of wealth, and a thousand new channels for the distribution of it amongst the laboring classes. Its purposes are good, and its means of reaching them wholesome. Such are its more immediate useful aims.

Its second design is to cultivate a taste for ornamental vegetation, and to contribute to the pleasures of the eye. I should be wanting in my duty on the present occasion, if I did not descant upon this branch of the labors of the society.

A garden is a theme of pleasant recollections to us in every stage of life. We remember, with a peculiar fondness, those days of infancy which were spent in playing through the labyrinths of the trimmed hedges of box, and where the althea, the lilac and the hawthorn, bounded the parterre, over which we struggled with heedless step and with hearts as gay as spring itself, amongst tulips, hyacinths and marigolds, as they clustered about our knees. The odor of the new blossom is still fresh and unforgotten in the recollection of our childish sports, when we mischievously shook the blooming fruit tree, and stood beneath the shower of its dazzling petals, in whose fall we had thoughtlessly robbed the year of its promise. In manhood the same images visit the senses with undiminished delight. In old age they come again with their usual freshness; as if that love of nature, that rapturous enjoyment of her beauties, were the only sense that time could not blunt, nor use destroy.

I do not envy that man who, at this season, can go forth from the city to the woods, and as he threads some winding rivulet, with its little cascades and rocky currents, can set his foot upon the modest violet, without feeling an interest in its simple history, or a pleasure at finding himself in the secret home of the wild flower. I do not think well of him who does not count himself a better man for being where nature has spread her untrimm'd beauties before his eye, and poured upon his ear the gush of her fountains. He is not to my liking who cannot acknowledge to himself a new transport, when, at this fragrant and blooming time, he finds himself surround-

ed by the profusion of flowers which, unplanted, shoot up in every glen and on every hillside, over every field and through every grove—the gay tribes of the azalea, the rich kalmias, and the perfumed sweet-briar.

"Flowers worthy of Paradise, which not nice art,
In beds and curious knots, but Nature boon,
Poured forth profuse, on hill and dale and plain,
Both where the morning sun first warmly smote
The open field, and where the unpierced shade
Imbrown'd the noontide bowers."

To me it seems that we are affined to our mother earth by an instinct, which civilization and artificial life cannot subdue, that makes us love the green leaf and the "crisp'd brook." That this instinct, after years of absence and disuse, still conjures up and renews without abatement its appropriate emotions of delight; when the objects to which it is allied recur to view; like that mysterious sense of recognition which is said to exist in the bosom of the child who, long separated from his parent, meets her, when no knowledge of her voice and features might recall her to his memory, and who is nevertheless conscious of her presence by the inward moving of a principle within him, that speaks to his heart with an almost supernatural inspiration. I have read of the young savage taken early from his native woods and indoctrinated in all the lore of the schools, trained to the usages of civilized life, secluded from all knowledge of his native haunts; yet when, at manhood, he has been left to pursue the bent of his free will—the first fanning of the mountain breeze—the first rustling of the forest leaf—the first gush of the clear river has awakened his dormant but indomitable instincts; and, breaking through the sophistications of his guarded life, he has rushed wildly and in the ecstasy of his long-repressed but now regenerated impulses, to the kindred wilderness of his fathers. Such seems to me to be the nature of that quick recognition of rural beauty, which affords so much satisfaction to the heart of every well constructed man, when he finds himself remote from the populous city, and embosomed amidst the verdure of hill and valley, and shaded with the fresh leaves of spring.

It is to minister to these pleasures, to enlarge their field, and to prolong their duration, that the Horticultural Society, amongst other things, directs its aim.—The cultivation of flowers admits of almost endless research. It is wonderful to observe how much the hand of man has done to produce variety and luxuriance in every species of this vegetable creation; and how his skill has mastered the secrets of their organic laws, and enabled him to give them new hues and shapes. Who has not seen the color imparted to the hydrangea by the change of the mold around its root? Who has not admired the infinite varieties of the tulip, the rose, and the carnation? Who has not contemplated with pleasant surprise the effect of cultivation in enlarging, redoubling, and expanding the structure of some of the most beautiful flowers of the garden? The knowledge which achieves these marvels deserves regard, not only as it furnishes us a philosophical amusement, but from the higher consideration, that it illustrates the labors of the naturalist, and unfolds the mysteries of the operations of that universal providence which fills this world with good and beauty.

There are many attributes of a moral cast belonging to the rearing of plants. These little earth-born toys, speak to us a volume of pretty histories; they are domesticated with us, and partake of our household affections; they are symbols of the most agreeable thoughts and sentiments; they are consecrated by ancient custom to our amusements, our business, our fancies, our superstitions, and to our religion. He who will read the history of our race, will find that in all ages they have had curious mystical associations with our being; they have been our oracles, our monitors, our talismans. The credulity of our ancestors has invested them with virtues, that supposo

them to be the peculiar favorites of the invisible agents which were believed to sway the destiny of mortals; and prescription, as hoary as our earliest tradition, has assigned to them a special function in the business of life: the laurel and the bay were supposed to be girted with the power of parrying the thunder-bolt; and they have formed the appropriate wreath of the hero and the poet: the ivy and the holly, the palm and the cedar, have for centuries typified to the pious and reverent mind, the mild and unfading lustre of christianity; and, even at this day, furnish evergreen garlands to decorate the festivals of the church. What countless recollections, mellowed by the bland and rich light of poetry, are clustered around the little sprig of rosemary! How does its very name conjure up the image of the wedding and its gay train, the wassail bowl, the joyous dance, and all the pomp of the festive hall! How does it recall the Christmas carol, and the old ballad, which rehearses in simple, uncouth verse, the merry-makings of that laughing race, who, many generations back, were as intent as we are now, to cheat life of its pain, and dall the edge of the scythe of time! The misletoe is scarcely less venerable in the Druid's faith, than in the respect of our immediate progenitors, who held it sacred to the service of the funeral. A mournful, yet not unpleasing sadness hangs around the melancholy yew and cypress dedicated to the silent solitude of the tombs. In the Romish calendar, there is not a day in the year without its saint, nor a saint without a consecrated plant: even the passion of the Saviour, by a beautiful conceit, is supposed to be recorded on the disk of a familiar garden flower, and to the religious mind serves as a memorial of the most sublime event in the annals of the human family.

Then, too, this world of flowers, how does it speak to us of the fairy enchantments, and wonder-working spells of that superstition, which built up the rich and homely mythology of the gone-by time!—of the slip of rue, which could set at naught and defy the malice of the meagre hag!—of the "vervain and the dill," that, according to the ancient couplet, had virtue to "hinder witches of their will!"—of the moonwort, which, if the legends say true, could unbind that which was fast, open double-bolted locks, and even snatch the shoe from the horse that set his foot upon it! How does it summon up to the imagination, the gorgeous and gaudy realms of Oberon and Titania, with their tiny mignons peopling the labyrinths of the rose, diving into the well of the honey-suckle, or sporting beneath the tent-like canopy of the inverted lily! and how remind us of that prankish sprite, who was wont to vex the household of our "idle headed eld,"—Robin Goodfellow,—lurking, as Shakspeare has pictured him, in the cowslip's bell, and sharing in the plunder of the bee, or sleeping amidst the odorous tapestry of the jasmine and the woodbine! The whole theme is redolent with the richest essence of poesy, and delights the mind as much by its association with the racy tales of genius, as the flowers themselves regale the senses by their forms of unmatched grace, their delicate hues or exquisite perfumes.

This floral department cannot but find favor with the ladies of Baltimore: its care is peculiarly within the province of their sex, and it therefore, constitutes an essential and valuable feature in the organization of the Horticultural Society, to enlist the zeal, and insure the co-operation of our townswomen, by soliciting them to become members of the society, and to assume an active participation in its duties. Under their control, and with the aid of their spirited devotion to our purpose, we hope to communicate an impulse to the public, which must speedily make this institution popular and productive of the greatest good. We have already, so far found grace in their eyes, as to attract the regard of several of the most intelligent and praiseworthy individuals of the sex in our city, whose names are now enrolled upon our records, and we do not doubt that their excellent example will be promptly followed by their companions and friends.

It is in the power of our fair compatriots, not only to enliven and refine the taste of this community, but to bestow a grace and a vigor upon the endeavors of this society, which, without them, it might in vain struggle to acquire. To them, therefore, we strenuously appeal for support, and trust that they will attach themselves to this institution with that ardor which forms a part of their character. Then may we expect that our festival of flowers, in each succeeding year, will be truly a banquet of delights; where beauty shall rule the hour, and joy walk in the footsteps of usefulness; where good and pleasure shall go hand in hand, to exalt, adorn and dignify the aims of the society, and our city win a fresh chaplet of fame for its virtuous devotion to these refined and bountiful pursuits.

From the sketch which I have imperfectly given of the nature and aims of this society, it will be seen that we stand in need of the commendation and support of our fellow citizens at large, and that our organization is one which may furnish the opportunity to do much good under the most agreeable and alluring forms. We ask no personal sacrifice from any one, of time or money, which might be employed with more profit in gratifying the demands of the other relations of life. We wish to give a direction to the tastes of our people, and rather train their recreations and their pastimes to pursue a channel which shall be no less fruitful in enjoyment, than their more customary pleasures, yet, which shall, at the same time, increase the store of comfort to all. We offer to the votary of our cause an occupation that engrosses the mind with innocent and peaceful duties; that inspires pure thoughts, elevates and refines the heart, and raises man to a love for simple and virtuous amusements; that infuses health and vigor into his veins; that fills his thoughts with subjects calculated to allay the irritations of life, and that exalt him to the worship and imitation of his God. We offer him an employment that shall make him conversant with green fields, and running brooks, and balmy skies;—a pursuit that shall warm his fancy to the relish of the beauties of nature, and that shall teach him to despise the tinsel and trickery of artificial life, by the fresh perception it will give him of the luxury of the "unceased air," and of the never-sating joys of the forest and field, of the woodland slope and flowery mead;—a pursuit, of which it is its chief glory and highest praise, that "all its ways are ways of pleasantness, and all its paths are peace!"

(From the Atlantic Journal.)

SULPHUR IN TREES. TO DESTROY ALL INSECTS PREYING ON THEM.

Farmers and gardeners ought to hail with rapture a safe, certain, easy and unfailing mode of driving away or destroying all the insects, bugs, caterpillars, lice, ants, which prey upon trees and often kill them.

Numberless have been the means proposed or devised to get rid of these troublesome guests, most of which are dirty, costly, or unavailing. Our farmers appear to have given up in despair the hope of preventing the deadly attacks of *curculios* on the roots of peach trees, and the fruits of the plum tree. Yet an efficacious mode is said to have been found several years ago in France, perfectly efficacious and applicable to all cases and all trees. The man who discovered it, deserved a splendid reward, yet his name has not even reached us. But we claim the honor to have been the first to make known the process in America, in 1823 in Kentucky, and in 1827 in Philadelphia. Yet the most useful knowledge is so slow to spread, that the fact is hardly known yet, or doubted by those who know of it.

We are happy to be able to publish two direct experiments in support of the fact and discovery.

1st. We bored and plugged with sulphur in the usual way, a plum tree which commonly dropped every year all the plumbs before becoming ripe, the

curculios lodging eggs in their germs. This was done when the tree was in blossom. On that year hardly any fruit fell, and the tree produced quite well.

2d. We find in the Genesee Farmer, of January 28, 1832, that a young willow nearly killed by aphids or lice, and pissuities feeding on their honey, was quite revived in three days, and all the lice and ants driven off, by boring the tree with an auger five feet from the ground and three-fourths through the diameter, filling with brimstone and plugging tight. The tree has thrived ever since.

The modus operandi of this singular process is very easy to explain. The vital energy of the tree and sap, dissolves the sulphur, carries it into circulation, and involves it in sulphuric gas evaporating through all the pores of branches, leaves and fruits. This gas is a deadly poison to insects and all animals, it suffocates them or drives them away as soon as they begin to smell it; but no injury whatever results to the tree.

We have never heard yet of any direct experiment on peach trees; but we are sure it will answer quite as well. If the sulphuric emanation could not reach quick enough the roots of the trees which are commonly attacked, the plugging must be done near the root or at the time of the descending sap, when it will sooner reach the roots. Let it be tried and the results made known. C. S. R.

(From the Abbeville Whig.)

DOMESTIC SILK IN SOUTH CAROLINA.

When on an excursion to the country a few days since, we found, much to our surprise and gratification, that some of our female friends had turned their attention to the culture of silk; and that many of them had made such progress in this laudable experiment, as already to have realized considerable profit from the production of the raw material, and manufacturing it into cloth. Mrs. Patrick Calhoun, of this District, who, among her other many excellent virtues, is remarkable for her industry and attention to her matters of domestic concernment, showed us in a house which she had fitted up for the purpose, at least, we would say, one hundred thousand silk worms, all healthy and busily engaged, some of them in forming the cocoon and others fitting themselves for the production of that valuable material. Mrs. Calhoun, who had tried the experiment last year on a smaller scale than she is doing the present, assured us that she had no doubt should no unforeseen accident occur, she would be able to raise silk enough by the latter part of August, to manufacture more than a hundred yards of cloth.

We know of two other ladies in this District, Mrs. Covington and Mrs. Baskin, who have been similarly engaged for several years, and we have seen some pieces of silk cloth manufactured by them, which, when worked up into clothes makes a beautiful and lasting dress. The cloth manufactured by them has sold at this place for \$3 per yard, and it is sought for with avidity, not only on account of its rarity, but also for its beauty, durability and cheapness. We hope that our ladies will turn their attention to this interesting, profitable, and laudable employment, and that we will be pardoned by those whose names we have given to the public, for having done so without their permission.

FINE PRICES FOR TOBACCO.—The following fine prices were obtained for tobacco, at Lynch's warehouse, during the last week, viz:—A crop of 4 hds. made by Mr. Benjamin Halliborton, of Person county (N. C.) was sold on Tuesday last, one for \$12 50, one for \$12 25, one for \$10, and one for \$6, averaging \$10.184. Two hds. made by Mr. Byrd L. Ferrel, of Halifax, were sold on Wednesday, at an average of \$11.—Three hds. of the crop of Mr. John Owens, of Pittsylvania, were sold, one for \$12 and two for \$10 each. And on Thursday, a hhd. made by Mr.

William P. Thomas, of Pittsylvania, was sold for \$16. The last named hoghead was very much damaged, by an accidental exposure to rain, but for which circumstances, it is thought, it would have brought from eighteen to twenty dollars.

(Lynchburg Virginia.)

TURNIP SEED.

For sale the following kinds of Turnip Seed, of the very first quality, at \$1 per pound.

EARLY WHITE DUTCH.

GARDEN STONE.

WHITE FLAT. GREEN ROUND.

RED ROUND OR RED TOP.

WHITE NORFOLK. WHITE TANKARD.

YELLOW ABERDEEN. RUTA BAGA.

And, as usual, a complete assortment of GARDEN SEEDS generally.

I. I. HITCHCOCK,

American Farmer Establishment.

BUCK WHEAT.

A few bushels of very superior quality for seed, for sale at the American Farmer Establishment, at \$1.25 per bushel.

I. I. HITCHCOCK.

N. B. Half a bushel is required to seed an acre.

IMPROVED DURHAM SHORTHORN CATTLE.

I have the selling (on commission) of the following fine animals,—viz:

A Bull 5 years old, full blood, for	\$200
Do 3 " " Do "	300
Do 2 " " Do "	250
Do 1 1/2 " " Do "	250
Do 1 " " (small) Do "	150

Several Cows and Heifers from \$200 to \$300 each.

Half Blood and upwards.—A Bull Calf, by Bolivar, 6 months old, fifteenth-sixteenths Durham Shorthorn, very promising, \$75.

A Cow 8 or 9 years old, seven-eighths Durham Shorthorn a very fine breeder, \$100.

Several Heifers 2 years old, half blood and upwards, prices from \$75 to \$100 each.

Several similar Heifers 1 year old, \$50 to 75.

Several half blood Bulls, 1 year old, \$30 to \$50 each.

Address I. I. HITCHCOCK.

Amer. Far. Office.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life,) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,

Ap. 26—tf. Amer. Farmer Establishment.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents

WANTED,

At the American Farmer Office and Seed Store, all kinds of GRASS SEED, CLOVER SEED, and choice Domestic Animals. Apply to

I. I. HITCHCOCK.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1832, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13 1/2 and the other 13 1/4 hands high, and will yet grow three or four inches: their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to I. I. Hitchcock, American Farmer establishment, Baltimore. The price is \$600 each.



HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Seythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 doz. Hay and Manure FORKS.

30 doz. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, hung ready for use.

SICKLES, English and American Seythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them.

May 24.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Conave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.

Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—Some slight variations will be noticed in our quotations of flour. The wagon price of Howard street flour fluctuates between \$3.37 1/2 and \$5.50, according to freshness and brand—fresh ground of good brands commanding the maximum. The store price of this article also varies according to the same circumstances. There is also a slight variation in the prices of grain, and for prime lots our highest rates are readily obtained, while ordinary and inferior are dull.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 432 hhds. Md.; 220 hhds. Ohio; 2 hhds. Ken. and 1 hhd. Penn.—total 654 hhds.

FLOUR—best white wheat family \$6.75 a 7.25; super Howard-street, 5.62 1/2 a 5.75; city mills, 5.62 1/2 a —; city mills extra 5.57 1/2 a —;—CORN MEAL bbl 3 62 1/2;—GRAIN, best wheat 1.12 a 1.18; white do 1.25 a 1.31;—CORN, white 60 a 61, yellow, 62 a 63;—RYE, 65 a 67;—OATS, 36 a 38.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED 5.00 a —.—TIMOTHY, — a —.—ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.00 a 2.50.—Herd's. — a —.—Lucerne — a 3 1/2 lb.—BARLEY—FLAKE 1.37 a 1.50.—COTTON Yd. 11 1/2 a 13.—Lou. 12 1/2 a 14.—Alab. 11 1/2 a 13.—Tenn. 11 a 12 1/2; N. Car. 12 a 13; Upland 12 1/2 a 13 1/2.—WHISKY, hhds. 1st p. 28 a; —in bbls. 31 a 32.—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18. HEMP, Russia, ton, \$195 a 205. Country, dew-rotted, 6 a 7 c lb. water-rotted, 7 a 8 c.—Feathers, 37 a 37 1/2.—Plaster Paris, per ton. — a 4.25; ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton. 28.00 a 30.00; bar Sns. per ton, 75.00 a \$5.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial: Horticultural Address; American Nankeen; Sunflower Oil; Great Grapevine—Report of the Committee appointed by the Horticultural Society of Maryland to award the Premiums at their First Annual Exhibition—Preserving Bees—Account of an Agricultural Excursion, made into the South of Georgia, in the Winter of 1852, by John D. Legare, Editor of the Southern Agriculturist; continued—On the Improvement of Agriculture in Virginia—Address delivered before the Horticultural Society of Maryland, at its First Annual Exhibition, June 12, 1853, by John P. Kennedy—Sulphur in Trees to destroy all insects preying upon them—Domestic Silk in South Carolina—Fine Prices for Tobacco—Prices Current of Country Produce in the Baltimore Markets—Advertisements.

The American Farmer,

Edited by GIDEON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum; due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

5. DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "J. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JUNE 28, 1833.

THE FARMERS' REGISTER.—We have received the first number of a new and valuable agricultural journal, with the above title, published in Richmond, by Edmund Ruffin, Esq. of Garysville, Va. The qualifications of Mr. Ruffin for conducting such a work, are unquestionably very high. He comes before the public with a mind well stored, and a pen thoroughly practised in the field of experience; and when we add, that these are accompanied by a spirit entirely devoted to the important interests he has undertaken to advance, we think it but the simplest effort of human reasoning to conclude, that complete success must attend his efforts. Mr. Ruffin has been an agricultural writer for many years, and the pages of the American Farmer bear ample testimony to his merits as such. His Treatise on Calcareous Manures, lately published, would be sufficient of itself to establish his high claims to public confidence. But the number of the "Farmers' Register," now before us, furnishes further evidence of his qualifications for the duties he has assumed; and, as it will be upon its own merits, at last, that the work must depend for success, this number offers high encouragement to both patron and Editor.

We shall copy into the American Farmer, whatever we find in the Register of sufficient interest;—it will of course be inferred, from what has been said above, that our extracts will be very copious. In wishing the most complete success to the Farmers' Register, we may be allowed to say, that we do so with the sincerity and earnestness of the patriot, rather than from the dictates of affected courtesy. That our immediate interest will be injuriously affected by the publication of Mr. Ruffin, there is no room for question; but that the American Farmer will ultimately be benefited by it, and our interest thereby enhanced, there can be as little doubt. We have lost some subscribers, who have exchanged ours for Mr. Ruffin's journal; but we shall more than replace them with others, who shall be awakened from the apathy of thoughtless indifference by the spirit excited by an increased circulation of agricultural writings. We flatter ourselves also, that we shall be able to render our own work more valuable by the selections we shall make from the Register; and that this new publication will be a spur to excite us to more exertion, so that the readers of the Farmer cannot fail to be greatly benefited by the commencement of this valuable cotemporary.

DIONEA MUSCIPULA.—Fenn's Fly Trap.—We are indebted to a much respected friend for a few of these very curious plants, which he found growing in the neighborhood of Newbern, North Carolina. He will please except our thanks for them. In his letter accompanying them, he remarks, that the best account of this singular plant that he has met with, is in Mr. Nuttall's Genera of North American plants, a work of great accuracy, and invaluable to the student of North American Botany, although it gives only a catalogue of the species with occasional specific descriptions. When this work was published, (1818,) the Dionea was only known to botanists as existing in the neighborhood of Wilmington, in North Carolina, on the north side of Cape Fear river, where Mr. Nuttall saw it, and traced it fifty miles up that river.—Our correspondent first saw it in Bladen county on Black river, a tributary of the Cape Fear. Two years ago, Dr. Loomis, of Newbern, and our correspondent, found it in the neighborhood of Newbern, where it had been previously known to some persons ignorant of botany, but who regarded it, nevertheless, as a curiosity. Recently, in passing through the county of Duplin, N. C. the latter gentleman found it very abundant in the wet pine barrens of that

county, associated with *Sarracenia flava*, and the *Liatris ordostratissima*. It was in flower in the first week of June.

Our correspondent, states also, that he saw in Florida, the *Magnolia macrophylla* (large leaf magnolia) in full flower about the middle of last April. This, he observes, is a new locality of this splendid tree, hitherto one of the peculiar boasts of the rich Botany of North Carolina. The editor of the American Farmer, paid a visit to the spot in Lincoln county, N. C. where this tree was supposed to be alone found, in 1820, and will never forget the splendid bloom he there saw. It was eight or nine miles south of the court-house, in a wild and dark forest.—The *Magnolia macrophylla*, grew in a grove of a few acres, and appeared to be confined to that locality exclusively, as, though he travelled through a great part of western Carolina, he found no specimen of it any where else. Our correspondent also remarks that the *Magnolia aculeolata* begins to bloom in Florida about the 25th of March, the stately *M. grandiflora* about the 25th of April, and *M. glauca* on the 12th of May.

Let us beg of our friends, *every where*, to enable us to disseminate such information as the above, by furnishing us with the materials. However trifling many of them may consider such information, we can assure them that it is very interesting to many of our readers. Our correspondent, from whose letter we have extracted the above facts, will please accept our thanks for them, and we beg of him further favors of the kind. In these days, when the march of mind is at quick step, pens like his should not remain idle.

We shall immediately act upon his suggestion relative to a "complete Flora of North America," but think it best to consult the gentleman he refers to, privately, before we take up the subject publicly.

VALUABLE MEMORANDA.—A friend in North Carolina has sent us the following brief extract from his memoranda. If all our subscribers in the United States, would send us the date of blooming of these trees, at their respective places, we could construct a table of great importance, from which the exact difference of the seasons between any two sections of the union, and between any two counties, could be seen at a glance.

Extract—June 1st, 1832. *Chionanthus virginicus*, (Fringe tree,) and *Kalmia latifolia*, (mountain laurel,) in bloom in the valley of the Patuxent, near Baltimore.

April 1, 1833. *Chionanthus virginicus* in bloom, and *Kalmia latifolia* beginning to bloom in middle Florida.

EARLY TOMATOES.—Ripe tomatoes were sold in market on Wednesday, 19th inst. by Mr. Freize's gardener. These we believe were the first this season, and we notice the fact that they sold readily at 50 cents a dozen, for the encouragement of other gardeners.

VEGETABLES FOR PREMIUM.—Gardeners will do well to remember that any vegetables that they consider very early or remarkable in quality or kind, may be left at the Office of the American Farmer, where they will be examined by a committee of the Horticultural Society, every Saturday morning between 8 and 9 o'clock, and receive such premium as they may be entitled to.

✂ We have received an excellent article from J. H. Craven, Esq. giving an account of his system of farming, which we shall publish next week. We regret that it did not reach us in time for the present number. Our agricultural friends in Virginia, may expect something valuable in this article. We take this occasion to request Mr. Craven, to continue the use of his pen in this way. The subject of deep and horizontal ploughing, &c. is worthy of his attention;

and, as he has had forty years' experience in agriculture, and been an observer as well as practitioner of horizontal ploughing, our readers cannot fail of being benefited by his writings.

TURNIPS.

Extract of a letter from a correspondent in England, to Wm. Prince & Sons, of the Lin. Bot. Garden, respecting the Turnip culture in that country.

The different sorts of turnips are sown thus, the Swedish at the end of May, or first of June, a few of the Tankard are sown about the same time, and about the middle of June to the end of that month the Globe is sown, and after these the yellow sorts. Some farmers sow the yellow varieties before the Globe, but as they are very early turnips, and apt to mildew when a drought sets in; we recommend them always to be sown last. The Tankard is not generally sown, except for very early eating by cattle, in the month of September, and in most cases the white Globe is preferred, it being a much more solid root, and if sown equally early superior to the Tankard. The later sown Globe follows in succession—about the month of January the yellows come in, and after them for spring feeding the Swedish; which, when pitted before the frost sets in and kept dry, will remain perfectly fresh and good till the month of June, if that is desired, but here our cattle are, before that period, either sold fat, or put out to grass. The Swedish turnip stands a great deal of frost, indeed there are few winters in which they are injured by it—but there ought always to be a quantity stored, to be used for food during snow storms. Horses are here fed during the winter with a few of them daily, along with their other food.

N. B. Wm Prince & Sons have imported above a thousand pounds of the above turnip seeds. They may also be obtained at the American Farmer Establishment.

(From the Vermont Chronicle.)

BEES.

MESSRS. EDITORS.

May 20, 1833.

A variety of expedients have been devised to prevent the entrance of the bee moth into bee hives. I am not well satisfied with any I have seen, though they may be of some use. I beg to propose a new one; and that is, a rope of cotton wool, extending from the entrance of the hive round to the entrance again; and if thought necessary, another around the top of the hive. Indeed, put cotton wool somewhat loose, in or on all places where the moth will incline to lay its eggs. It may be well to sprinkle the cotton with fine salt. If the rope becomes wet and adheres to the hive or bottom board, a new rope may be substituted. *The reason of the thing:* Insects in general, and moths in particular, avoid cotton wool, as a *nidus* for their eggs, probably because they are so easily caught by its threads, and because there is no oil in it as in wool. Bees themselves will not walk upon it. Salt too is avoided by insects as a *nidus*, and by sprinkling the cotton with that, it may be still more uncomfortable to the miller.

The experiment is so simple, I hope it will be tried. In general, if a hive is well stocked with bees there is not much fear but they will manage to guard the entrance, if the apertures are not too large.

J. W.

EXTRAORDINARY OX.—A remarkably fine six year old Durham ox, bred and fed by E. B. Vaughn, Esq. of Burway, near Ludlow, was slaughtered by Mr. Lea, jun. of this city. The carcase weighed 98 score 5lbs. (or 1,665lbs.) rough fat 200lbs.; rump 132lbs.; sirloin 154lbs.; hide 147lbs. Over the first rib the depth of fat was 9 inches, and from 4 to 5 inches on the sides. The individual who bought the rump cut off a steak which weighed 11lbs. When alive the ox stood 17½ hands high.—*Worcester (Eng.) Journal.*

AGRICULTURE.

(From the Farmers' Register.)

SPECIFIC MANURES—CLOVER—FIELD PEAS.
MR. EDITOR: May 18, 1853.

Sir,—I have long wished the publication in eastern Virginia of a paper similar in character with that which the prospectus of the Farmers' Register indicates. From it, I confidently anticipate important improvements in our agricultural operations, as well as an increase in the fertility of our farms, surpassing what had (until within a few years,) been hoped by the most sanguine proprietor. Under that excitement, and perceiving that you invite the transmission of agricultural notices of even minor importance, I have determined to send this paper, in aid of what I deem a laudable adventure on your part—leaving it entirely in your discretion to publish or suppress it.

No intelligent agriculturist hesitates to admit that the deterioration or increased fertility of our farms depends essentially on the greater or less quantity of animal and vegetable manures spread on them, and that to increase the amount, ought to form a primary object in the operations of every intelligent proprietor—still, as valuable auxiliaries are doubtless attainable, it becomes our duty to seek after them with greater assiduity than has as yet been manifested. The resemblances in the animal and vegetable kingdoms (so numerous and so obvious as to induce the most intelligent writers on natural history to class them as beings of the same order, and that nature passes from the one to the other by imperceptible degrees) afford an unbounded field for investigation, and when explored, will, I am persuaded, furnish invaluable instruction.

It is highly presumable when man first subjected the horse, ox, &c. to his control, as nature apparently had provided only green vegetables for their subsistence, that he, confiding in her unerring wisdom, also deemed other food superfluous; but the earliest records of history present those animals participating with their masters in the use of corn, and experience evinces that in their increased bulk and muscular strength we are amply remunerated. The dog rejects vegetables; and although he can subsist on bread, yet if entirely deprived of flesh, (the food most congenial to his nature,) it will be attended with a proportionate decrease of strength and courage. Birds and fish in like manner require for their maturity that aliment which is adapted to their different constitutions. The vegetable kingdom sustains the analogy. Animal and vegetable manures are congenial to the growth of every species of vegetables; and yet the locust if planted in a soil the most fertile, but defective in lime, like the dog feeding on bread, although sustaining still its growth, bears no proportion to trees of like kind on utterly exhausted hillsides abounding with marl. The pine on the contrary, luxuriates on soils worthless for the production of food for man or beast beyond any tree of the forest; but if transplanted into a highly calcareous soil, however abounding with putrescent vegetables, its growth announces uncongenial food, and like the sheep sorrel, it seems (from the presence of lime) divested of the power of feeding on the abundance of manure by which it is surrounded. This discrepancy, common to animals and vegetables, serves more obviously to illustrate the similitude in nature's works, and should teach us that discrimination in food which experience has ascertained to be indispensable to the improvement of the animals under our immediate care and observation, is equally expedient in our agricultural operations; and as that unerring instructor has shown that vegetables, spontaneous in growth, are inadequate to the perfection of animals, we should infer their incompetence, when rotted, to perfect the variety of the species of plants which we cultivate: and this suggests the expediency of our exploring that portion of the earth itself accessible to us, to discover, if possible, any combinations within, congenial to the growth of vegetables,

which, from their position, are inaccessible to the roots of growing plants.

I am the more confident in advising other agriculturists to institute similar investigations, from an experiment with *gypseous earth*, made under anticipations of success so feeble, as barely to buoy me under the operation, on one acre of land—because I then was, as I now am, uninformed of the quantity of the sulphate of lime per bushel, and knew not the duration, if any, of its nutritious effects on the growth of clover or other grasses; but at this time, I appreciate the consequences of my trial as far more important than any other (the use of marl always excepted) which has ever come under my observation.

Corn was cultivated in 1831, on a sandy ridge in my field, marled in 1826, and yielded from eight to ten bushels; it was seeded with wheat in October, and clover seed (in the chaff) sowed in December following, and soon after from forty to fifty bushels of gypseous earth carelessly spread on an acre. In June, the number of plants, and the growth of the clover, palpably marked that portion on which the gypseous earth had been thrown, and was to me exhilarating indeed—while the yellow and feeble aspect of the pretermitted spaces, under any other circumstances, could not fail to deter every prudent farmer from adventuring a second crop of clover on a similar soil. The wheat languished, and appeared neither cherished or damaged by aliment the most nutritious to clover, by which it was surrounded, and scarcely yielded a recompense for its cultivation. This spring, appearances are equally flattering, the clover being about two feet high, and a space of thirty or forty acres, which was spread last fall with the same earth, fully sustains the character of this manure being the specific food for clover. How long its beneficial influence will endure, experience will hereafter determine. Annual applications of the French and Nova Scotia plaster are considered advisable. The effects of the gypseous earth used by me, are, I think, superior the second year, and far exceed any benefit which I have ever derived from my use of the imported gypsum.

On viewing the prospect before me, I can no longer entertain a doubt that every acre of my fields, (without aid from the stable and farm pen manures,) at the trivial expense of carting and spreading from forty to fifty bushels of gypseous earth per acre, may be made to produce an exuberant growth of white, red, and bird foot clover, and I rely on the experience of others, as well as on my own, for assurance that wheat sowed on a heavy clover lay will yield an abundant crop; and as I am disposed to think that corn, aided by the stubble of the preceding crop of wheat, as well as the putrid clover, will yield as abundantly after wheat as before it, I would suggest the expediency of changing the present rotation, notwithstanding the alleged objections of the extra labor, and the probable detriment to the young clover. For the former, (admitting the fact,) ample recompense will be derived in the increase of the wheat crop, from the improvement of the soil by guarding the vegetables ploughed in, from the waste which is inevitable from the corn cultivation; and as the preparation of the field may be commenced early in September, and easily completed by the 10th of October,—the harrows drawn both by the horses (then at leisure) and the oxen, will sufficiently cover the sowed wheat by two operations, and complete the seeding in fifteen or twenty days. Of the effects on the young clover plants I am not fully informed. My course will be to sow the seed, (without separation from the chaff,) as I "lay by" corn or give the last tillage. The cover on the seed will protract their vegetation, probably until the foliage of peas planted from the 1st to the 10th June will afford protection from the sun.

The cultivation of field peas has so long engaged the attention of farmers as to create a strong presumption that every valuable property appertaining to them must long since have been ascertained, and

consequently, that farther speculation on their value will be superfluous. But, as there may be others as well as myself, who again and again have derived the benefit, and have not noticed, or if they have, have not systematically availed themselves of that crop for the suppression of weeds, grass, &c. and thereby greatly facilitating their sowing of wheat—to those, perhaps, the following notices may not be altogether unimportant.

A rich mold, abounding with the partridge pea, weeds, &c. was last year cultivated with difficulty, and yielded an abundant crop of corn. Early in June, peas were planted equidistant with the corn, covered with the foot, and no farther labor incurred than a slight hilling when the corn was last worked. In October, the vines were removed, and the land remained quite clean, and in the best possible condition for sowing of wheat, which was completed by a single operation of the harrows after the fluke hoe; and at this time my prospects are entirely satisfactory, and no obstacle either to cutting or gathering up the crop is apprehended. My neighbor, from land of precisely similar description, and immediately adjoining, raised an abundant crop of corn, but planted no peas. In October, the double bar share plough was used; the harrows were necessary to smooth the furrows—and after the wheat was sowed, a second operation with them was required to cover the seed, which I considered less effectual than mine, on the rougher surface left by the fluke hoe. His wheat is obviously and greatly inferior at this time; and so overwhelmingly numerous and luxuriant are the vines of the partridge pea, that I am confident he must resort to the reap hook or grass scythe for the preservation of his crop. But be that as it may, I have no hesitation in assuming that the impediments in cutting and the inevitable loss in gathering up the wheat, will far surpass in value the seed peas and the trifling labor of hoeing them—leaving in favor of my course, without drawback, a heavy amount of the most nutritious food (if fed while green, and alternated with corn) for fattening hogs; and if judiciously attended to (when pulled up for sowing wheat) the vines are eminently valuable food during the winter, for every description of stock.

Before I close this communication, (already much longer than I had contemplated,) I must invite attention to the previous notice on the effect of the growth of the field pea on that of the partridge pea. To allege that the foliage of the former, in the months of August and September, obstructed the vegetation of the latter in the month of October, and onwards through the winter, is obviously inadmissible. To what cause then shall we assign it? I hope hereafter to read in your paper a solution of the inquiry; but in the mean time, I shall remain under the impression that the previous growth of the field pea had gleaned the pasture peculiarly suited for the nourishment of both, and left the partridge pea no resource but to await a future and suitable fecundation of the soil.

A SUBSCRIBER.

IMPROVEMENT OF WORN OUT LAND.—It is said that during the last few years, twenty thousand Swiss and Belgian emigrants have settled upon lands in Virginia and Maryland, which had been supposed to be worn out and almost worthless; but which under their cultivation has been made as *productive as the good lands of the West*; in consequence of which lands have risen in value, and industry has received a new impulse. If the farmers of this state will diligently set about improving their land, by all possible means, those who are most anxious to go to the west will soon be cured of the moving fever; and if the people will make a rail road to carry their produce to market, many of North Carolina's valued sons, who have already gone to seek their fortune in a new country, will be told of scenes of prosperity and happiness that will entice them back again to their own, their native state.—*N. C. Star.*

(From the Petersburg Intelligencer.)

DISEASED WHEAT.

We have exhibited to some of our agricultural friends in this vicinity, the samples of diseased wheat, forwarded by our Nottoway correspondent, and alluded to in the subjoined communication. They concur in opinion that it is affected by what is here termed *the blight*, a malady which heretofore has more frequently prevailed in the vicinity of *salt water* than in the up-country regions. Now, as the clouds during the long rainy spell in May, came principally from the east, is it not probable that they were charged with an unusual proportion of *salinated fluid*, [sic?] which like an epidemic, extending westward, has produced on vegetation phases as new to the eyes of our Nottoway friend, as if, supposing him a physician, he were to meet with that scourge of the Atlantic cities, the *yellow fever*, in his rural practice.

Green Field, Nottoway, June 9, 1833.

Gentlemen,—The present appearance of our wheat crop indicates almost a *total failure*. Notwithstanding the unusual quantity of rain which has fallen within the last month, attended, almost daily, with the temperatures of summer's heat, our wheat crop looked promising until about a week past. A disease has attacked it in the head which will baffle the skill of our most experienced and eminent country doctors. They describe the disease, as first making its visible appearance in the *turning yellow* of the straw on the stalk, then commences a *yellow speck* at the top of the head, continuing downwards, interspersed promiscuously on and through the head, until finally the whole of it assumes one uniform color of yellow fever disease. From the heads, herewith sent you, you will be able to form a better idea of the wheat in its diseased state, than I can describe, as my *botanical* knowledge is not sufficient to describe technically the trunk of the wheat, and all of its component parts, with the beauty of a Barton, or the accuracy of a Linnæus. All diseases, whether animal or vegetable, have their proximate and exciting causes, and I hope some of our intelligent and observing farmers will take the subject into consideration, and be able to give us some information on the wheat. I am informed by my oldest neighbors, that they never have before, seen such a disease in their wheat. I sowed from different kinds, to wit, the white flint, (which I now send you,) the wild goose, the bearded, and the smooth head golden shuck; not with a view, as you might infer, of overstocking the market, but to experiment and to find out which kind seems best adapted to my little farm. The smoother head is less injured. Perhaps this may be owing to its being about a week earlier. In the other three, I can discover no very material difference.

Respectfully, your old friend, and
SUBSCRIBER.

(From the New England Farmer.)

POTATOES AND INDIAN CORN.

MESSRS. EDITORS:

Sir,—I here send you the result of several experiments, which I have made. Several years ago, I planted blue potatoes, late in the season, and as all of those which I considered large enough for seed had been culled out, I planted small ones not more than an inch and a quarter in diameter. When I dug them, they were as large as any I raised. Last spring I planted two rows, side by side, of the red potatoes, one row of the largest size, the other the smallest, which I think proper to plant, perhaps not one-third of the weight of the large ones. When I dug them, I could not tell which were the largest. So I conclude, the reason why small potatoes yield small ones, is owing to putting too much seed in the hills; as a small potato has as many sprouts as a large one. But this I have proved, that the same results do not always arise from the same experiments in different

kinds of potatoes. For several years past, we have wanted early whites, and early red eyes, side by side. If the whites were hilled after the blow, they uniformly produced a large number of small potatoes, and but few of a good size; while hilling had no effect on the red eyes.

I made an experiment in planting Indian corn a few years ago, for my own satisfaction. I planted the hills three and a half feet apart on end of a piece of land, and four feet on the other, with the same kind and quantity of manure: about half the length of the rows was on a stiff heavy soil; the other half a light loamy soil; without weighing, I could not tell which gave the best product.

Note by the Editor of the New England Farmer—By some experiments made by J. Whitlaw, Esq. which are given in detail in the *New England Farmer*, vol. i. page 53, and vol. iv. page 314, that gentleman ascertained that large potatoes were better for seed than small ones, and that large potatoes when cut into quarters will produce more, other things being equal, than when planted whole. Other cultivators assert that the best way is to plant potatoes of at least middling size, cutting off and applying to other uses the butt and top ends of each potato, planting the middle pieces cut into quarters. The reason of this proceeding, is, that the shoots or eyes from the middle part of a potato are commonly larger and stronger than those of either end, and if the whole of a large potato is planted, there are usually too many shoots in a hill, and those shoots are too near each other to afford so great a product as they would if deposited in the soil at due distances.

Mr. Knight, the celebrated English horticulturist, has found, that, "for a late crop, small sets, [seed potatoes] may be used; because the plants of the late varieties always acquire considerable age before they begin to generate tubers, [young potatoes;] but for an early crop; he recommends the largest tubers [seed potatoes] to be planted; and he has found that these not only afford very strong plants, but also, such as readily recover when injured by frost; for being fed by a copious reservoir beneath the soil, a reproduction of vigorous stems and foliage takes place, when those first produced are destroyed by frost or other cause." [*Hort. Trans.* iv. p. 418.]

(From the London Horticultural Register.)

METHOD OF PRESERVING THE LEAVES OF TREES, IN CASHMERE, AS A SUBSTITUTE FOR HAY.

From the manuscript papers of the late Mr. Wm. Moorcroft.—Published in the *Geographical Journal*.

In several mountainous countries, greatly distant from each other, and in which much grass, apparently of a good quality, might be cut for hay, as winter food for cattle, I have observed a preference given to the leaves of certain trees for this purpose:—these were the willow, the mulberry, a variety of elm, and several others, but the first mentioned and the walnut were held to be the best, and considered much more warming and nourishing, than any kind of grass made into hay, especially for sheep. Small branches, after having been cut when in full leaf, and before they begin to lose any of their verdure, are immediately so disposed within the first forks of the tree to which they belong, as to be thereby retained in the form of large hay-cocks. These branches are piled loosely, yet are so engaged amongst themselves as not to be detached by wind, neither do they lose their leaves, nor are the least rotted, or in any other respect damaged, as to their fitness for food.

I am not mistaken in asserting, that the fat is whiter of the mutton of Cashmere, not only than of the mutton of Tibet, but of any other sheep I have seen; but whether this difference be wholly, or in a degree, owing to the sheep being fed on dry leaves, I have not facts enough before me to determine.

This forage, unless where very abundant, is reserv-

ed for the severe part of the winter, when the cattle are driven under the trees, on which the store is suspended; and the dry branches being pulled down, are eaten by them with great avidity. The practice is thus simple, unexpensive, affords a considerable resource in a well timbered or forest farm, and may, perhaps, be worthy of trial, if it prove not injurious to the growth or quality of the timber; on which, I refer to what I have already said, of the management of walnut trees, in Cashmere. The scarcity of natural pasturage, has forced the farmers of Tibet, to cultivate the productions of their soil, as lucerne, &c. merely for the increase of fodder; whereas, in Cashmere, the exuberance of natural productions, the neglect of cultivating them to perfection, the selection of the leaves of forest trees, in preference to the leaves and other parts of grasses, and esculent roots, as turnips, &c. may bring the soundness of the judgment of Cashmere farmers into question, by the farmers of England. My observations on this preference are too limited to be of any practical value; but I am able to aver, that sheep, which had been preserved from dying by the rot, through feeding on dry prangos, fell off in condition greatly, when put upon clean washed turnips, and regained their former state rapidly on reverting to prangos. It appears to me not improbable, that if sheep, when they just begin to show symptoms of rot by *arching their backs*, were put on a diet of dry leaves alone, they would be prevented from dying of this complaint; and I conceive would prove speedily curative; also, in the case of the oscaris worm, and rustling in the windpipe of lambs, fed on rank aftermath in the beginning of a winter, following a wet autumn. The arching of the line of the back, perhaps, produced by an attempt, to relieve the irritation occasioned by vigorous activity of the small fluke worms, which have only just entered the gall-ducts, is a symptom I have never heard noticed by shepherds; but, according to my own observation, is the first which indicates their presence, in the beginning of winter. When grass is also stored here for winter fodder, it is twisted into thick ropes, immediately after being cut; and in this state, hung across the upper branches of trees. Without other preparation for hay, it thus keeps free from rotteness, and generally even from moldiness, notwithstanding the great quantity of rain and snow that falls in this country. Grass thus dried, is generally given to the flock in a morning, and the leaves in the afternoon or evening; but the latter are most depended upon for fattening. Oil-cakes, made of linseed, walnut-kernels, mustard seed, along with the seed of cotton, are employed for this purpose, and the flags or leaves of sedge.

I. T.

HORTICULTURE.

(From the London Horticultural Register.)

ON THE CULTURE OF RHUEARB,

WITH SOME ACCOUNT OF ITS HISTORY AND INTRODUCTION INTO THIS COUNTRY.

BY JOSEPH PAXTON, F. L. S. & C.

HISTORY—The first species of rhubarb cultivated in this country, was the *Rhœum raphaniticum*; it is a native of Asia; but by whom it was introduced is unknown. The ancient Greeks called the root of commerce "*Rhabarbarum*," because it grew plentifully on the banks of the river Rha, (Volga,) in Russia. The Greeks, however, of more modern times, changed its name to "*Barbâricum*," because it was brought to Barbary for sale. The species so much in use at that time, has till lately been generally believed to be the *R. palmatum*; but Mr. David Don has satisfactorily proved it to be the *R. australe* of Mr. Don's "*Flora Nepalensis*," and the *R. emodi* of Dr. Wallich. It is, however, very probable, that the roots of various species are used, as the bark of various species of *Cinchona* is collected as the true bark. By

what means, or to whom mankind is indebted, for the discovery of the medicinal quality of the roots, is totally unknown; it is, however, probable, that its virtues were appreciated by the ancient physicians: for Dioscorides, physician to Antony and Cleopatra, wrote on its qualities; in his work on Botany and Medicine, published just before the Christian Era, where he recommends it against weakness of the stomach, diseases of the liver, &c. &c. Galen also, another Greek author, who wrote on medicine about a century afterwards, strongly recommends it for diseases of the liver. Paulus Aegineta, who is said to have been the first man that practised midwifery, appears to have first used rhubarb as an opening medicine. The roots were brought from China, where Michael Boyne, in his "Flora Sinensis," published at Vienna, in 1656, says the plant is a native, and grows in great abundance. It was introduced from thence by Tartary to Aleppo, Damascus, and Alexandria, and thence reached Vienna. It was not known to Europe, till 1535, when the Chinese brought the roots for sale to the city of Goa in India. Valmont Beaumare states, that some soldiers in the army of Charles the V. brought it to Spain from Africa about the same time. This does not appear unlikely, for the dreadful disease, which the followers of Columbus brought from America into Spain, spread with such fearful rapidity, that it became indispensable to adopt measures to stop its violence; it seems therefore probable, this drug was introduced as a remedy; for Girellasso de la Vega, who died in the year 1536, mentions rhubarb as a sovereign cure, for the evil of the newly discovered world.

The Portuguese were the first who brought rhubarb by sea from Canton; but the Dutch soon obtained a part of this trade. In 1597, Gerard mentions, that himself and others had it growing in their gardens, exclusively for use in medicine; and relates a curious anecdote, relative to its use in case of an ague: he says, "I learned a notable experiment of one John Bennet, a Chirurgion, of Maidstone, in Kent; a man as slenderly learned as myself, which hee practised upon a butcher's boie of the same towne. Being desired to cure the foresaid ladde of an ague, which didde grievously vexee him, hee promised him a medicine, and for want of one for thee presente, hee tooke out of his garden three or four leaues of the plante of rhubarbe, which myselte had among other simples given him, which he stamped and strained with a draught of ale, and gave it thee ladde to drinke; it wrought extremely downwarde and upwarde within one hower after, and never ceased untill night: In the ende, the strengthe of the boie overcame the force of the physicke, it gaue over working, and the ladde loste his ague."

Although in the present day, we set great value on the medicinal virtues of this root; yet the principal reason of its cultivation in our gardens, is for the stalks, which are served up in creams, made into tarts, &c. and medical men have all recommended them as amongst the most cooling and wholesome tarts sent to table. We shall not, however, venture to lay down rules for making them, lest our ignorance in the art of cookery, should expose us to the ridicule or displeasure of our countrywomen, which we feel no disposition to run the risk of encountering. We may, however, without fear of contradiction, venture to say, that if the stalks be cut into squares, put in single layers on a pan, and placed in an oven of a moderate heat for about twelve hours, and afterwards put into wide mouthed bottles, with a fifth or sixth part of brown sugar, then covered down with bladder, and occasionally shook for the first fortnight, they make a most excellent preserve.

Rhubarb cultivated in this country, is found to equal for medicinal purposes, that of foreign growth. The palmate leaved was first planted in this country in 1763, and the "London Society of Arts" in 1792 awarded a gold medal to Sir Wm. Fordyce, for raising 300 plants of this species from seeds, in the preced-

ing year. In 1793 it was awarded to Mr. Thomas Jones. In 1794, Mr. Wm. Hayward, of Oxfordshire, received it for propagating rhubarb by offsets taken from the crowns of large plants instead of seeds; and in the same year another was awarded to Mr. Ball, for his method of preserving the roots for use in medicine. Dr. Tirruegel, of Stockholm, states that no roots should be taken up till they have been planted ten years, and that they should be taken out of the ground in winter, before the frosts set in, or early in the spring, and immediately cut in pieces, and carefully barked; they should then be spread upon a table for three or four days, and be frequently turned, that the juice may thicken or condense within the roots. After this process, make a hole in each piece, and put a thread through it; by which let them hang separately, either within doors or in some sheltered situation.

All medical men acknowledge two virtues in rhubarb, that of evacuating bilious humors, and that of fortifying by its astringency the fibres of the stomach and intestines. Lord Bacon remarks, "that rhubarb has manifestly in it, parts of contrary operations; parts that purge, and parts that bind the body, and the first lie looser, and the latter lie deeper; so that if you infuse rhubarb for an hour, and crush it well, it will purge better, and bind the body less after the purging, than if it stood 24 hours." The principle in which the active property exists, is supposed to be a peculiar chemical substance called rhabarbarin.

SPECIES AND VARIETIES.—These have now become rather numerous, but the sorts generally cultivated for tarts, &c. are the following:

1 Wilmot's	4 Elford	7 Gigantie
2 Cox's	5 Hybrid	8 Rhapontic
3 Judd's	6 Buck's	9 Palmate-leaved

Of these Wilmot's, and the gigantie, may be considered decidedly the best; the former being a most excellent force, and the latter grows to an amazing large size without rankness. The palmate-leaved is held up by many as amongst the best for tarts. A. T. Thompson, Esq. M. D. remarks in the Gardener's Magazine, that he has tried the leaf-stalks of almost every species of rhubarb cultivated in Great Britain, and none, in his opinion, are equal to the palmatum; he judges they are more succulent, less fibrous, and contain a much larger supply of rheumatic acid, than those of any other species. Others again are decidedly opposite in their judgment, and complain of its strong medicinal taste, and its dry and wiry leaf-stalks. Now, according to our ideas, both these opinions are perfectly correct; if the roots are planted in strong land, and an exposed situation, the stalks in general are both dry and wiry; if on a very wet bottom in any kind of soil, they have a strong rank acid, but if they are planted in light rich soil in a north or northwest border, their stalks will be found to equal, if not surpass those of the hybridum or rhaponticum.

CULTURE AND PROPAGATION.—All the sorts may be propagated, either by seeds or dividing the roots; the former is the best mode, making by far the finest plants, although in many cases division answers extremely well; care must always be taken to retain a good bud on the crown of each section, and to plant them on good ground, well trenched and manured. It is usual with many gardeners to blanch rhubarb early in the season, which decidedly improves the flavor and appearance, and the stalks requires less sugar to make them palatable, than when exposed to the open air; this may be accomplished by large sea-cale pots, either with or without dung, but if this blanching be done out of the natural season of growth, it comes under the denomination of forcing. To accomplish this properly with little expense and trouble, has led gardeners to adopt many methods. One of the first practised, was placing large pots or handglasses over the roots, and covering them with a good thickness of hot dung, after the manner of forcing sea-cale. Although great crops may be obtained this way, the stalks are

very liable to be much broken by growing against the sides or tops of the pots; to remedy this evil Mr. Judd, of Edmonton, covered his bed with open frame work, around, and on which he placed the dung. On this system it grew very fine, and required much less attention than with pots or glasses. Another method is to take the roots up carefully, and plant them in a fluid mushroom shed, either in a bed of tan, or in pots and boxes filled with light soil, or tan, and allowed a temperature of 45 to 55 or 60 degrees. Tan is preferable to soil, because it receives the water more freely when given to the roots, and Mr. Knight has satisfactorily shown that the roots of all perennial herbaceous plants, contain within themselves, all the organizable matter, necessary for the formation of the leaves, and therefore require little or no soil, but only heat and water for their development. After the forcing season the roots are divided and planted on a north border, and the strongest selected for forcing again the following season. This method we believe is practised at Elford, Kirkley Hall, Pinkie House, Scotland, and many other places. We have found the system of forcing in mushroom sheds to produce large crops, of an excellent quality; and with some exceptions, it may be reckoned one of the best methods in use. We have observed, however, that where much fermentation is going on, with new beds, the color of the stalks have been materially injured, and the flavor nothing near so good as when grown under other circumstances. Others again take up old roots of four or five years' standing, and plant them in large pots of rich mold, as thick as the roots can be placed in each pot; these pots are taken either to a peach-house, green-house, pine pit, or any other place where they can have a good heat, but experience has taught us that old roots when forced, never produce stalks so fine as young roots under similar treatment. Another method practised at Holly-Bush Hall, near Lichfield, is found very successful, particularly with the strong growing sorts; it is true a very large quantity of dung is required to give a sufficient heat in severe weather, but where it can be accomplished it answers extremely well. The young roots are permanently planted two feet apart, in beds three feet wide, with alleys betwixt them two feet wide, and one and a half feet deep. In the autumn, after the leaves are off, fork the beds over, to the depth of four inches, and break the soil small with a rake head, then place a sea-cale pot over each root, and cover the soil in the inside with dry sand six inches thick; this done fill up the trenches with dung from the stables, well shaken together, and carry it up one foot three inches above the beds, then cover the beds with dry littery straw, to the height of one foot three inches above the tops of the pots. The sides of the beds should be built up with bricks, and pigeon-holed.

The system of culture we would recommend, is one that we have practised ourselves with the greatest success; and first we shall give a short detail of our method of

SOWING THE SEED.—About the end of February, or beginning of March, make up a bed of stable dung, about three feet high at the back, and two feet six inches at the front; when well beaten down with the fork, and nicely levelled off, set on a frame of the size required, and lay on the bed, about nine inches thickness of good light rich mold, mixed with a third of good rotten dung; beat these ingredients well together, and when the surface is level, scatter the seeds broadcast, and cover them about half an inch thick, with the same soil broken fine; then put on the glasses, and in about three weeks the plants will be up. As soon as they begin to appear, give abundance of air, and continue to increase it, so that in April the glasses may be taken off altogether; they will, however, require protection from frosts at night, until they are ready to plant out in the open ground, which will be in May.

PLANTING OUT.—If it is intended to plant out for permanent use, select a quarter of good rich soil, and

trench it at least three feet deep, adding a good supply of well rotted dung; be careful, however, in trenching, not to bury all the top spit of soil in the bottom of the trench, but reserve it for the roots to be planted in, for they will thrive much better in it, than in that taken up so far from the surface. Then plant the roots in rows six feet apart, and four feet from root to root in the rows, for the smaller growing sorts, as Wilnotts, &c. and six feet from root to root for the gigantic and other strong growing kinds. Or if planted on Dr. Bevan's system, stated Vol. I, page 456, they will grow very fine. None of the stalks should be gathered the first or second years, but in the third season they may be used as required. Cut off all the flower stalks as soon as they begin to shew flower, except such as may be left to collect seed from, which should always be the finest. Never gather the stalks to excess late in the summer, for if this be not attended to, they will so far degenerate as to throw up the following season a complete wood of spindling, stringy stalks, scarcely fit for use; whereas, if treated properly, they will continue to produce abundantly for many years.

GENERAL CULTURE.—All the culture required after planting out, is to keep them free from weeds during summer, and fork in a good coat of rotten dung every spring; the crowns should also be covered with a portion of half rotted dung, to preserve them from being injured by frost in winter.

PLANTING OUT FOR FORCING.—Take the plants from the hot bed where they were sown, and plant them in rows eighteen inches apart every way, on ground previously well-dunged and trenched two feet deep. Stir the soil about them occasionally during summer to encourage their growth, and by the time they are two years old, the roots will be very fine, and at that age best calculated to force.

MODE OF FORCING.—The best mode of forcing, and one attended with the least trouble, is to place a small frame of one or two lights in a peach-house, stove, or forcing pit of any kind, and having put in a sufficiency of old bark, take up a quantity of roots without breaking them, and plunge them in the bark as thick as they can be put together, until the frame is filled; then cover them down with wooden covers, or the glasses belonging to the frame will do, providing mats be thrown over to exclude the light. If they become dry, water them as often as they require it; and in about a fortnight the stalks will be ready for use. When the first half of the frame has begun to shoot up, fill the other part after the same manner; and when it has grown a little, remove the roots first put in, and fill up with a fresh supply, and continue to do so until the forcing season is over: the roots forced may be either thrown away, or planted; but we would not advise to force them again, as young two years old plants are far better.

Those persons who have no forcing-houses, may have rhubarb something earlier, by placing sea cake pots with loose tops over the roots without dung; and when the stalks get to the top of one pot, take off the lid, and place another pot upon it: this will allow them to grow to a great length, without danger of breaking.

(From the New York Farmer.)

VISIT TO THE LONNEAN BOTANIC GARDEN OF FLUSHING.

On the 10th ult. we took steamboat up the East river to the rural village of Flushing, where is the well known garden of Messrs. W. Prince & Sons.

The first subject to which we would invite the attention of our readers is the collection of Dahlias, comprising above six hundred varieties, three hundred of which have just been received from European collections. Among those the most novel and rare are a number of striped varieties, and one of deep crimson hue, with a white border. One bed contains nine hundred and thirty-six plants. These with an equal

number along the borders, will present, when in full flower, a blaze of beauty probably never surpassed.

There were pointed out to us four varieties of the Judas Tree, *Cercis*, in flower—the European red and white, and the American red and deep crimson; the latter highly interesting, found wild in Maryland, and transferred to the garden by inoculation.

A magnolia grove, containing above sixty large trees of various species, producing flowers and seeds in abundance, afforded a sight of this pride of American forests not elsewhere seen in this part of our country. It has often been remarked that this grove presents its greatest display of bloom at the period of the birth of Linnaeus, the 21st of May, thus seeming to honor the day that gave birth to the father of botany. A lofty tree of the *M. cordata*, or yellow flowering magnolia, was resplendently in bloom. Of this last, Messrs. Prince have two distinct varieties, one of which originated with them from seed. This species produces flowers twice during the season, in May and August. Of the *Magnolia conspicua*, we were shown a tree ten feet high. The *M. obovata* was in its prime, as well as the *M. gracilis* and *pyramidalis*: the purple and cream-colored blossoms of the former present a striking and beautiful contrast to those of the other species. The varieties of the *M. grandiflora*, one of which has double flowers, were equally admirable. The white purple tinged flowers of the *M. soulangeana* had just disappeared. We were pleased to learn that all these varieties of the magnolia stand our winters without the least protection, as was evinced by their vigorous appearance in one of the most exposed situations in the garden.

A large number of the *Wistaria consequana* attracted attention by their splendid floral attire. It is a hardy climber, and supposed capable of standing the winters of Quebec.

A large plot of Azaleas, containing upwards of fifty varieties, presented blossoms of every hue. Among them were the yellow and the orange, and one of double flesh-colored blossoms. In addition to these were rare Chinese Azaleas. The scarlet *Cydonia japonica* was splendidly decked with flowers. Not less gay was the double variety, blush or white flowering. The fruit of the first is small, but that of the last is of considerable size, and possesses a delightful and powerful fragrance, making odorous preserves. Along the main avenue is a number of trees of the Scotch *Ran*, or mountain ash, and near one of them is quite a lofty weeping birch, transplanted originally from its native highlands, overshadowing a seat suited for the perusal of Scotland's romances and poems. A purple leaved beech attracted our attention by the feuilletmort hue of its foliage, giving the casual observer an impression that it was in its last stage of existence.

The roses, amounting to seven hundred varieties, are arranged in large plots or beds, and numbered according to the catalogue. Among them is the yellow musk cluster. Specimen plants of the China roses are planted in separate beds. Of this class are one hundred and sixty varieties, thirty of which are of the latest importation. We were surprised to find the *Kerria* (formerly *Corchorus*) *japonica* so perfectly hardy and resplendent with flower. The Irish yew is distinguished for its erect position, and the deep green of its foliage—a beautiful plant. The Messrs. Prince have near one hundred plants of the *Hamiltania oleifera* or oil nut.

Among the trees which should be in every situation, where animation as it were is to be given to the landscape scene, the Silver Abeel tree should be found. The upper surface of the leaves being green, and the under side white, their very quivering in the gentle zephyr enlivens the eye. There were three species of the snow-drop tree, with their pure white blooms in wreath. The variegated or striped leaved hollies are interesting from the diversity and beauty of their foliage. The leaves of some are covered with prickles that occasion them to be called hedgehog holly.

It was satisfactory to us to find the following trees and shrubs perfectly hardy and acclimated. Three varieties of the Chinese *calycanthus*, the white, the yellow, and the grandiflora, the two former in an open situation, and the latter in a southern exposure—the *Buxes balearica* or *Minorca boxtree*—the spreading and upright *cyprus tree*—the *Pistachia vera*, or true pistachia nut—the *Potinia serrulata* of China—the *Rubus rosafolius*, or double rose flowering bramble—the *Ilex cassine*—the *Lagerstremia indica*, in a southern exposure.

We noticed that the branches of the *Shepherdia elegans* or Buffalo berry tree had been cut off, and on inquiry, found that the plant being a male, they had been carried to some female trees in another part of the garden, to fertilize them. A hedge of the Chinese arbor vitae was particularly beautiful. Several thousand young plants were in growing for the same purpose.

The plot containing the collection of pæonies is extensive, containing 2500 plants of near fifty varieties. The *Pæonia moutan* is one of the most magnificent of flowers, of which Messrs. P. have several varieties, some of them seedlings. They also have about 150 plants from the seeds of the *Pæonia whitelet*, impregnated with the *humei*, and *P. fragrans*. These last are not yet in flower.

A fine specimen of the weeping beech with its peculiar and graceful curve of branches arrested our attention, also the *Fagus cristata*, or crested beech.

In the herbaceous department the species are planted in beds, and arranged alphabetically. This we consider very convenient, both to the proprietors and to visitors and purchasers. In a large collection of violets the *Viola grandiflora* was conspicuous. There are at least a dozen new seedlings of *Aquilegia canadensis*.

Among the collection of *Pinus* we remarked the *P. pinea*, or stone pine, a tree recommended, as our readers will recollect, by Commodore Porter, for the excellence of its fruit.

The Messrs. Prince have bestowed much attention to the grape. They have quite a number of varieties from seed obtained by an admixture of the pollen of many varieties. It is their opinion that it is from seedlings that we must expect to obtain varieties of foreign vines, that will answer as well in our climate as our native grapes.

We observed a number of bee-hives, one of Mrs. Griffith's, and the others of the common construction. The bees in the latter had been all destroyed by the miller, while those in the former were in a thriving condition.

The garden of the Messrs. Prince being a commercial one, it cannot be expected that much attention will be given to picturesque effect. The dwelling of Wm. R. Prince, however, which is connected with the garden, is admirably located for display of taste. Mr. P. has by no means disregarded improvements. He appears rather desirous of crowding into his ornamental grounds specimens of all the beautiful plants contained in the commercial garden, than to illustrate the principles of correct taste in landscape gardening. The out-buildings on the whole premises are with few exceptions very old, and mostly unpainted, and consequently give to the premises a forlorn aspect.

CAMELLIAS.—The Chevalier Soulangue Bodin says, the most essential point in cultivating the camellia is that of not putting it into too large a pot—that this plant succeeds, "far better in a good free-working mold, fine in its texture, and rather sandy," than in bog-earth. This soil is different from that recommended by Mr. Thomas Hogg, wherein he says the most suitable soil is "a free or open black bog earth, well mixed with about one-third of yellow loam." The article of the Chevalier Bodin contains many details, which we should deem excellent.

[New York Farmer.]

RURAL ECONOMY.

(From the Genesee Farmer.)
FEEDING HORSES.

The Quarterly Journal of Agriculture, vol. 2, contains an interesting article on the most economical manner of feeding horses. It will be seen from the extract lately published from Mr. Dick, veterinary surgeon at Edinburgh, that food must be reduced to a pulaceous mass before it can benefit the animal to which it is given, and that bruising, grinding, or cooking very greatly assists the digestive process. The same considerations indicate the propriety of cutting the straw and hay which is fed, and of mixing it with the grain, roots or other feed. The advantages of this mode consist not only in enabling the animal to perform its labor with more ease, but in economizing the food, a great portion of which voided where abundantly fed in the ordinary mode, without having imparted its nutritious properties to the animal. The latter advantage extends to other animals, as the cow, hog, &c. At the milk establishment of Mr. Smith near Baltimore, eighty cows are kept upon cut and cooked food, with great economy of expense. On visiting some years ago, the establishment of Col. Jacques, at Charlestown, Mass., I observed piles of cut hay and straw, mixed with cut roots, bran and water, prepared for his cattle, and was told there was found to be a great saving in preparing their food in this way. Upon our canals and rail roads, where great numbers of horses are employed, a saving of twenty-five per cent. would constitute a large sum in the course of a year. If I mistake not, the cases I am about to cite, will demonstrate the practicability of doing this, and of enabling the teams to perform their labor with more ease than they do now.

Messrs. Hanbury and Freeman, Spitalfields, keep eighty-two horses. The animals receive all their food in the manger, no hay ever being put in the rack. They are kept in excellent health, condition and appearance, upon the following daily rations: 18lbs. cut hay and straw, the latter being one-eighth, 14lbs. bruised oats and one lb. bruised beans, making in all 33lbs. food per diem. The beans are discontinued in summer on account of their heating quality, and an equal addition made to the oats. The mass is blended ere it is fed. Half a pound of salt is given weekly to each horse, one moiety Saturday night, and the other Sunday morning, and operates as a gentle purge.

Mr. Higgins, of London, keeps three hundred heavy cart horses. No hay is fed in the rack. It is all cut down with straw, into lengths not exceeding the fourth of an inch. The oats, barley and beans are always coarsely ground and added to the hay and straw. The hay and straw (equal parts of each) are given to the larger horses at the rate of 19lbs. and to the small ones of 14lbs. per diem—the other materials make up the daily allowance to 40lbs. to the larger, and 30lbs. to the small horses. An ounce of salt is daily mixed up with each ration, except in winter. The quantity remains unaltered through the year; though barley or oats are substituted for beans in warm weather.

Dr. Sully, has for twenty years successfully pursued the practice of feeding 30lbs mixed food to his horses. From the great labor they have to undergo, says the Doctor, being accustomed to travel eight miles an hour, have no secure place, and yet few cattle are in better condition. He objects to racks; because if these are filled, horses are apt to eat too much, thus overloading their stomachs; so that when in this full distended state, they are taken out of the stable and put to work, their wind will be endangered. The rack also, he thinks, occasions great waste of provender. It is the doctor's opinion, that a horse with a full rack of hay will consume and spoil 30lbs. a day; but that when it is cut down, and mixed with a

due proportion of cut straw and bruised or ground grain, ten pounds is enough. The Doctor has his food prepared and mixed in a loft; a box is allotted to each horse, from which a wooden pipe leads to the manger, with a cover at the top, removeable at pleasure. To prevent the horse throwing out his feed from the manger strips are nailed across it twelve inches apart.

Doctor Sully has four classes of food, as indicated below. Of these he thinks that containing the potatoes is to be preferred. Indian corn would be a good substitute for beans and peas, and the Swedish turnip for the potatoes.

	1st Class.	2d Class.	3d Class.	4th Class.
1. Farinaceous substances, consisting of bruised or ground beans, peas, wheat barley or oats, - - - -	5	6	10	5
2. Bran, fine or coarse, - - - -				7
3. Boiled or steamed potatoes, mashed in a tub with a wooden bruiser, - -	5	5		
4. Fresh grains, (boiled barley.) - -	6			
5. Hay cut down into chaff, - - -	7	8	10	8
6. Straw cut down into chaff, - - -	7	10	10	8
7. Malt dust or ground oil cake, - -		2		2
With 2 oz. of salt for each class, -	30	20	20	20

"As the horse advances in age, his teeth gradually lose their perpendicular position, and become less fitted for grinding the hard food, which the nature of his work and his artificial situation in stables, renders it necessary for him to receive. His mastication is rendered imperfect, and the grain, when given him unbruised and unground, is often swallowed entire.—And as the saliva and gastric juice of the stomach are held to be the solvents of the food, and as more perfect mastication must allow these to act with more effect upon it, a more perfect digestion, we may believe, is induced by giving the grain in a bruised or ground state, and by the cutting down of the hay and straw. Thus, must not only the practice be conducive to the health of the horse, but it must produce a great saving of the food. To persons requiring constant and steady work for their horses, the advantages of the practice are very obvious. The carrier, with his horse provender weighed, mixed, put into a bag, and carried with him, can feed and refresh his horse at all times and places. The same observation applies to the farmer. By means of provender so prepared his horses soon fill themselves, and thus have time to lie down, sleep and rest."

No grain is given to horses in Switzerland without its due proportion of cut hay and straw. The hay cutting machine is in general use, for the cow as well as the horse.

If we pass into Germany, we observe the same, or perhaps greater attention to the food of the horse.—To all the grain he receives, a certain portion of cut hay and straw is added, and the practice is not uncommon for the Swiss and German horse-man when on a journey, to feed his stud with coarse brown bread.

B.

(From the Genesee Farmer.)

LAND DITCHING.

MESSRS. EDITORS.

Having read an article in your paper [see Am. Far. vol. 15, page 75] on the subject of draining, permit me to suggest what I am convinced to be an improvement on that operation, as far as regards such spots of grounds as are surrounded by higher grounds.

It is what the English farmers call *land ditching*. This work is performed in nearly the same manner as the writer of said article indicates; with this difference only, that the ditch to be cut may be as narrow, and on both sides as steep, as the convenience of the

operator with the spade will admit, and when he can dig no deeper, a kind of hoe called the scoop, is to be had recourse to; the blade of which, instead of being flat, has its sides turned up so that it is three or four inches wide and eight or nine inches at least in length, with which, standing astride the ditch, the loose earth is scraped up and thrown out, and by doing which the ditch may also be rendered deeper if necessary. When the drain, which requires only three or four inches width at the bottom is thus made, hemlock brush is to be thrown into it, which, when made somewhat compact by ramming it down, must be about half a foot thick; then the earth which was dug out is thrown upon it and the ditch entirely filled up; taking care on the lowest parts of the ground, where the drain of course is shallow, to give it a sufficient coat of earth for the plough to go through without drawing out the brush.

By this practice less digging is required, the necessity of occasionally clearing out the open drain is obviated, no surface of ground is lost, and the plough can go over these land ditches in all directions; the land will at all seasons be properly dry, and after some years when the brush is decomposed, a vein is gradually formed for the water to pass to the lower grounds in the same manner as it does to the source of a well. I have never heard that any hollow spot of ground once land ditched, has ever needed any other operation for keeping it dry.

Perhaps I ought to add, that at the end of the land ditch, whether it issues into an open ditch, brook, or other outlet, some sods of grass or flat stones must be piled up to prevent the earth from caving in, and choking up this very useful drain.

Yours, very truly,

A HOLLANDER.

MISCELLANEOUS.

WILD PIGEONS.

The annexed article affords curious information respecting the peculiar habits of the *wild pigeons* of this country. It is taken from Silliman's Journal for April last, for which periodical it was furnished by S. P. Hildreth.

The most remarkable characteristic of these birds is their associating together, both in their migrations and also during the period of incubation, in such prodigious numbers as almost to surpass belief; and which has no parallel among any other of the feathered tribes, on the face of the earth, with which naturalists are acquainted.

These migrations appear to be undertaken rather in quest of food, than merely to avoid the cold of the climate, since we find them lingering in the northern regions around Hudson's bay, as late as December, and since their appearance is so casual and irregular sometimes not visiting certain districts for several years in any considerable numbers, while at other times they are innumerable. I have witnessed these migrations in the Genesee country—often in Pennsylvania, and also in various parts of Virginia, with amazement; but all that I had seen of them were mere straggling parties, when compared with the congregated millions which I have since beheld in our western forests, in the state of Ohio, Kentucky, and the Indiana territory. These fertile and extensive regions abound with the nutritious beech nut which constitutes the chief food of the pigeon. In season when these nuts are abundant, corresponding multitudes of pigeons may be confidently expected. It some time happens that having consumed the whole produce of the beech trees in an extensive district, they discover another at the distance perhaps of sixty or eighty miles to which they regularly repair every morning and return as regularly in the course of the course of the day, or in the evening, to their place of general rendezvous, or as it is usually called, the roosting place. The roosting places are always in the woods, and sometimes occupy a large extent of

forest. When they have frequented one of these places for some time, the appearance it exhibits is surprising. The tender grass and underwood are destroyed, the surface is strewn with large limbs of trees broken down by the weight of the birds clustering one above another; and the trees themselves for thousands of acres, killed as completely as if girdled with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out where for several years after, scarce a single vegetable made its appearance.

When these roosts are first discovered the inhabitants for a considerable distance visit them in the night, with guns, clubs, pots of sulphur, and various other engines of destruction. In a few hours they fill many sacks, and load their horses with them.—By the Indians a pigeon roost or breeding place, is considered an important source of national profit and dependence for the season; and all their active ingenuity is exercised on the occasion. The breeding place differs from the former in its greater extent. In the western states above mentioned, these are generally in beech woods, and often extend in nearly a straight line across the country for a great way.—Not far from Shelbyville, in the state of Kentucky, about five years ago, there was one of these breeding places, which stretched through the woods in nearly a north and south direction; was several miles in breadth, and was said to be upwards of forty miles in extent. In this tract almost every tree was furnished with nests, wherever the branches would accommodate them.—The pigeons made their appearance there about the tenth of April, and left it altogether with their young before the twenty-fifth of May.

As soon as the young were fully grown, before they left the nest, numerous parties of the inhabitants, from all parts of the adjacent country, came with wagons, axes, beds, and cooking utensils, many of them accompanied by the greater part of their families, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and it was difficult for one person to hear another speak without bawling in his ear. The ground was strewn with broken limbs of trees, eggs and squab pigeons, which had been precipitated from above, and on which herds of hogs were fattening.—Hawks, buzzards and eagles, were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while from twenty feet upwards to the tops of the trees, the views through the woods presented a perpetual tumult of crowding and fluttering pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber; for now the axe men were at work cutting down the trees that seemed to be most crowded with nests and contrived to fall them in such a manner, that in their descent they might bring down several others; by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old ones, and almost one mass of fat. On some single trees upwards of one hundred nests were found, each containing one young one only, a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions from the frequent fall of large branches broken down by the weight of the multitudes above, and which in their descent often destroyed numbers of the birds themselves.

I had left the public road to visit the remains of the breeding place near Shelbyville, and was traversing the woods with my gun, on my way to Frankfort, when about one o'clock the pigeons which I had observed flying the greater part of the morning northerly, began to return in such immense numbers as I never before had witnessed. Coming to an opening by the side of a creek called the Benson, where I had a more uninterrupted view, I was astonished at their appearance.—They were flying with great steadiness and rapidity, at a height beyond gun-shot,

in several strata deep, and so close together that could shot have reached them, one discharge could not have failed of bringing down several individuals. From right to left, far as the eye could reach, the breadth of this vast procession extended, seeming every where equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time and set down to observe them. It was then half past one. I sat for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase both in number and rapidity and anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed the Kentucky river at the town of Frankfort, at which time the living torrent above my head seemed as numerous and extensive as ever.

(From the Newbern Spectator.)

LOUISIANA.

A gentleman of Newbern, N. C. has favored us with the following most interesting extract of a letter which he lately received from his friend in Louisiana. The writer is a gentleman of high respectability, who, previous to his removal, in 1818, was a merchant in Plymouth, in this state. As our own state is hopelessly, and apparently forever, doomed to feel the paralyzing effects of inaction and sloth, we consider it our duty to lay before our readers all the information which we can acquire that may have a tendency to better the condition of such of them as are wasting their energies unprofitably, and desire a change. Of the productiveness of Louisiana we have heard much; but this is the most minute and satisfactory statement that we have seen. The cotton produced there is known to be the best upland in the world, and is now worth 14 cents a pound. Taking then his estimate, eight bales, or 3200 pounds to a hand, which is the result of experiment, the gross amount is \$448; and as the cost of cultivation, transportation, &c. cannot be much greater than with us, we may safely calculate the net proceeds of the labor of one hand at about \$350. Taking the maximum produce of which he speaks, a hand would clear \$450. When we take into consideration the astonishing fertility of the land, the price, though far above the value of our lands, cannot be considered high. The Arpent, if it be the same as that of France, as we presume it is, is 512.605, or nearly 5 6 of the American or statute acre. A wealthy and intelligent planter from Red river is now in this place, who confirms the statements of the writer, and gives accounts of Louisiana still more favorable.

Red river, Louisiana, May 9, 1833.

Dear Sir,—I have just received your letter dated the 12th March, expressive of your wish for me to write you in relation to the health of this country, its navigation, the price of land, if easily cleared, and the practicability of procuring it with improvements, the price and hire of negroes, the product of each hand, and finally, to contrast our lands here with those of Mississippi, and advise you as a friend, &c. &c.—which requests I will proceed to answer with pleasure, and as fully as I am capable.

The chief of the land cultivated in my section is alluvial, and consequently unhealthy, we have however, a good deal of pinewoods with creeks and springs of excellent water, which are repaired to, when contiguous, for summer residence, by many of the planters. Indeed I know some whose plantations are fully twenty miles from the nearest pinewoods, who resort to them in the summer and fall seasons, with their white family, entrusting their slaves to the management of white overseers, whom they visit once a week or fortnight, as occasion requires. I am as I conceive more fortunately situated in that respect than many of my friends. I am permanently settled on the pinewoods, four miles from my plantation, which I visit four or five days every week, if good

weather, and return in the evening. This gives me plenty of exercise on horseback. Were I differently situated, I could not put near so high a value on the country as I do. As regards our navigation, or facility in getting our produce to New Orleans, or our supplies from thence, much depends on our location. Those having plantations on Red river, where steam boats ply eight months in the year, and sometimes longer, below the falls, are best situated, while those on the creeks, as I am, are obliged to haul, or wait the rise of water to boat it.

The value and hire of negroes here I cannot speak of with much accuracy. The law of this state prohibits, at present, the introduction of that species of property, except for our own use: they cannot be sold or hired in any manner whatever, until years after their introduction, nor is it at all common to hire out slaves, the property of minors; they are generally sold, at public sale, with all the other property of the minor's estates, unless provided against by the will of their parents. The price of land has varied considerably since I first came to the country in 1818, when it was high. It has since been at about half the price of that time, but latterly it has advanced again, and I conceive is now as high, if not higher, than at any time since my residence here, and probably on the rise still. In 1819, I bought what may be termed woodland, at 27½ dollars per arpent, payable about one-third cash, and the balance one and two years. In 1827, I bought as good land at 12½ dollars per arpent, the payments about the same, and now such lands would, I apprehend, be held at 20 to 30 dollars per arpent.

As you will have inferred in perusing this letter thus far, it is very common to see land, as well as all other species of property of which planters here are possessed, sold at their death, and if not for debt, the most usual credits given may be stated at one, two and three years, on land. I attended the sale of 480 arpents of land some eight or nine miles from me, on 1st February—it had probably 200 arpents in cultivation, and was sold at one two and three years credit, for a division among the heirs, and brought 16,100 dollars.

Our land here is generally heavy timbered, and consequently very laborious to clear. It is, however, very productive in cotton, and of long last. In N. Carolina, I know many tracts that may be cleared and worn out ere a tract here could be freed of its timber. The product of a hand here in cotton, our chief selling staple, varies materially in different years, and with planters; some years are much more favorable to the culture of cotton than others, and some men are much more pushing than others. In 1830, the best cotton year I have experienced, I find some planters who assure me of their having made ten or more bales, of 400 lbs. to the hand. That however, is more than I have yet realized, and I would say that a bale to the acre, and eight bales to every effective picker, ought to satisfy any reasonable man. For mercantile business, I have long lost all fondness and have therefore no participation in it, and am unable to give you the information on that subject which you desire. I can say, however, that in Alexandria, 20 miles from me, a great many goods are sold, and I imagine at considerable advance, and doubt not that a profitable business might be done by one having the means of laying in his supplies in New York.

With the land of Mississippi I am not well enough acquainted to contrast it with ours here. Suffice it to say, that those of Red river and its contiguous streams, to wit: Bayou Rapide, Bayou Robert, and Bayou Beuff, I consider more productive in cotton than any other I have met with.

In conclusion, I will give you the same advice I have for years given those of my Carolina friends, (who called for it,) having a wish to better their situation!—Come and examine the country yourself, lest after having removed to it you or your family may dislike it. This will not cost much money or loss of

time, and both may be well expended for your children, should you become a grower of cotton. The sugar and cotton growing states you know have an influence on, and greatly serve to keep up the value of slaves in your state, and without saying what is the value of that species of property here, I will venture to say it is more than will cost to bring it to Louisiana.

TURNIP SEED.

For sale the following kinds of Turnip Seed, of the very first quality, at \$1 per pound.

EARLY WHITE DUTCH.

GARDEN STONE.

WHITE FLAT. GREEN ROUND.

RED ROUND OR RED TOP.

WHITE NORFOLK. WHITE TANKARD.

YELLOW ABERDEEN. RUTA BAGA.

And, as usual, a complete assortment of GARDEN SEEDS generally.

I. I. HITCHCOCK,

American Farmer Establishment.

BUCK WHEAT.

A few bushels of very superior quality for seed, for sale at the American Farmer Establishment, at \$1.25 per bushel.

I. I. HITCHCOCK.

N. B. Half a bushel is required to seed an acre.

LINNEAN BOTANIC GARDEN AND NURSERIES, Flushing, near New York.

WILLIAM PRINCE & SONS announce to all the proprietors of Nurseries, and to those who propose to establish new Nurseries, that they will furnish articles desired at a liberal discount, and at a credit that will afford ample time for profitable reimbursement. We wish also to make known to all vendors of Seeds, or to those who desire to undertake such business, that we will furnish every variety of Vegetable, Field and Flower Seeds in quantities, at very low rates and a liberal credit. The seeds possess the advantage of being raised under our own observation, or, when imported, of being tested to our satisfaction.

The assortment of Turnip Seeds alone consists of 27 varieties, including Dale's New Hybrid, the Yellow Altringham, and all other new and choice varieties. In the Catalogue of Seeds will be found many entirely new and very choice varieties, which have never before been offered to the public. The accuracy and vitality of the Seeds furnished by us are expressly guaranteed.

Bulbous Flower Roots, Dahlias, &c., which are easily transported, and generally vended in a dry state at the Nurseries and Seed Stores, can be supplied to any extent, and at rates that will afford a large profit to the vendor.

Every person already engaged, or who desires to engage in the sale of the above articles, will, on application, receive all the information, requisite to the object in view, and such an establishment ought to exist in every town in the union.

The New Catalogues, with reduced prices and extensive additions to every department will be forwarded to all applicants, and the present period is particularly eligible for forming arrangements in anticipation of the fall business.

N. B. It is desired that the applications be made direct per mail.

JACKS AND JENNY FOR SALE.

The celebrated Jack DON CARLOS and two of his offspring (a young Jack and Jenny) are offered for sale.

Don Carlos was imported from the Island of Majorca, in 1820. He is now nearly sixteen years old, (in the prime of life,) is 52 and a half inches high, stout built and in full vigor, his color is black with white muzzle and belly. He is exceedingly docile and gentle. Price \$200.

Also,—A young JACK, a son of Don Carlos, 4 years old, 43 inches high, well made, stout and promising, of same color as his sire—price \$200.

Also,—A full sister of the last, 3 years old, 44 inches high, well made and handsome, color dark iron grey. Price \$100.

If these three animals be taken together they will be sold a great bargain. Apply to

I. I. HITCHCOCK,

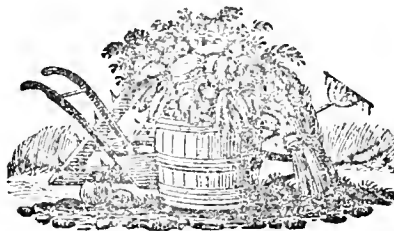
Amer. Farmer Establishment.

Ap. 26—ff.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1832, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13 $\frac{1}{2}$ and the other 13 $\frac{1}{4}$ hands high, and will yet grow three or four inches: their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to I. I. Hitchcock, American Farmer establishment, Baltimore. The price is \$600 each.



HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

1000 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Scythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 do. Hay and Manure FORKS.

30 do. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, hung ready for use.

SICKLES, English and American Scythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them.

May 24.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Scythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.

Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET—There is no change in the prices of produce, except a trifling advance in Howard street flour, fresh ground and of favorite brand. Grain of all kinds remains as before, with very little doing—the approach of the harvest measurably suspends operations, both with sellers and purchasers.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 1.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for cigars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, '6 00 a 20 00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 340 hds. Md.; 156 hds. Ohio; 25 hds. Ken. and 5 hds. Penn.—total 654 hds.

FLOUR—best white wheat family, \$6.75 a 7.25; super; Howard-street, 5.62 $\frac{1}{2}$ a 5.75; city mills, 5.62 $\frac{1}{2}$ a 5.75—city mills extra 5.57 $\frac{1}{2}$ a —;—CORN MEAL bbl 3 62 $\frac{1}{2}$ —GRAIN, best red wheat, 1.12 a 1.18; white do. 1.25 a 1.31.—CORN, white, 60 a 61, yellow, 62 a 63;—Rye, 65 a 67—OATS, 36 a 38.—BEANS, 75 a 80—PEAS, 65 a 70—CLOVER SEED 8.00 a —TIMOTHY, — a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50—Herd's — a —Lucerne — a 37 $\frac{1}{2}$ lb.—BARLEY—FLAX SEED 1.37 a 1.50—COTTON Va. 11 $\frac{1}{2}$ a 13—Lon. 12 $\frac{1}{2}$ a 14—Alab. 11 $\frac{1}{2}$ a 13—Tenn. 11 a 12 $\frac{1}{2}$; N. Car. 12 a 13; Upland 12 $\frac{1}{2}$ a 13 $\frac{1}{2}$ —WHISKEY, hhd. 1st .28 a;—in bbls. 31 a 32—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do. 16 a 18; common, 16 a 18 HEMP, Russia, ton, \$195 a 205 Country dew-rotted, 6 a 7c. lb. water-rotted 7 a 8c —Feathers, 37 a 37 $\frac{1}{2}$ —Plaster Paris, per ton. — a 4.25; ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial. Farmers' Register; Dionca Muscipula, Venus' Fly Trap; Valuable Memoranda; Early Tomatoes; Vegetables for Premium—Culture of Turnips—To Destroy the Bee-moth—Extraordinary Ox—Specific Manures, Clover, Field Peas—Improvement of Worn Out Lands—Diseased Wheat—Experiments with Potatoes and Indian Corn—Method of Preserving the Leaves of Trees, in Cashmere, as a Substitute for Hay—On the Culture of Kibbarb, with some Account of its History and Introduction into England, by Joseph Paxton, F. L. S. &c.—Account of a Visit to the Linnean Botanic Garden at Flushing—Culture of Camillias—Experiments in Feeding horses—Land Ditching as practised in Europe—Description of the Roosting Place of the Wild Pigeons in the Western Country—Letter from a Gentleman in Louisiana giving an Account of the Productions and Resources of that Country—Prices Current of Country Produce in the Baltimore Markets Advertisements.

The American Farmer,

Edited by GIDEON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged by THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect at THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

5. DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, G. I. Irvine Hitchcock, Baltimore, Md.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JULY 5, 1833.

VALUE OF COCOONS—*their quality and preparation for market.* So many inquiries are daily addressed to us for the price of cocoons, the manner of preparing them for market, &c. &c. that we deem it proper to give the information in this way. It is impossible to state the exact value of cocoons except upon inspection. They may appear to the unpracticed eye to be of the first quality, being of the largest size and of the firmest texture, and yet worth nothing for reeling; because, they may be *double*, (spun by two or three worms,) which so interlock their fibres as to render them incapable of being reeled; or they may have been injured in the process of curing, or smothering the insects, which cannot be detected by any one but the reeler, or one skilled in the business. Both these descriptions of cocoons are worthless to the reeler. The same well formed and large cocoons, though free from the above faults, will be more or less valuable according to the manner and degree of curing. For example, a parcel of cocoons of first quality as to size and form, if just cured with the body of the crysalis moist and fresh, will be worth twenty-five per cent. less than a like parcel with the crysalis perfectly dry; because, in the first place there is less weight of silk fibre in the pound of cocoons, and in the second place the moisture of the crysalis renders them extremely liable to mold. All these considerations, therefore, render it impossible for us to say what cocoons are worth. The purchaser must examine them before he can say what he will give for them, and his judgment will be regulated by the proportion of *double*, imperfect, or injured cocoons the parcel may contain, compared with the good sized, well formed, and well cured ones. If the cocoons are of good size, have been well cured, and the crysalis well dried, and if there are no double, imperfect or injured cocoons in them, they will be worth fifty cents a pound; and less in proportion to the number of faulty ones, till the value will be reduced to twenty-five cents a pound—and it would be not worth while for the reeler to trouble himself with any that would not be worth the latter price.

Cocoons of the first quality can only be produced by strict attention to the worms, to the curing, and preparing for market. The little "Treatise on the Culture of Silk," by the Editor of the American Farmer, for sale at this office, price twelve and a half cents, contains all necessary directions on the subject. The worms must be kept supplied with as much food as they will consume, fresh and free from moisture; they must be kept clean, dry, and well aired. When they begin to spin they should have proper mounting frames, and not be crowded for room in forming their cocoons—this is necessary to prevent double cocoons. As soon as the cocoons are finished they should be cured by baking, steaming, or exposure to the sun. In baking them great caution is necessary to avoid scorching them. In steaming, equal caution is necessary to avoid decomposing the fibre—they should not be touched or stirred till they have become dry and cold. In curing them in the sun, care must be taken that they are exposed a sufficient length of time to kill and dry the crysalis. Whatever method of curing is adopted, the cocoons should be exposed to the sun or spread out in a dry airy place to dry perfectly; and they should never be packed up for market or future use till the crysalis shall have been found (by taking several out of them) to be perfectly dry. When they are ready to pack up for market, they should be examined, all faulty ones taken out, and then packed in barrels or boxes, by putting in just as many as the box or barrel will hold by gentle shaking down, but without pressure; a few *cloves* or other pungent aromatic should be put in each barrel or box to prevent mildew; and the box or barrel

conveyed to market with as little agitation as possible. If the cocoons are mashed or much dented, they cannot be reeled.

The greater part of the cocoons that have been offered for sale, were not worth any thing. Probably nine tenths that are raised are so imperfect that the reeler can make nothing of them. The cause of their imperfection may be always traced to the carelessness and inattention of those who attended the worms. If the worms are stinted in their food; if wet or injured leaves have been given them; if they have been crowded on the tables or mounting frames, or disturbed after they began to spin; the cocoons will be more or less imperfect, according to the degree of such bad treatment. The best cocoons are always made by worms that begin to spin, on or before the twenty-eighth day after they were hatched; and they can only be made to do so by giving them a full supply of fresh clean leaves; keeping them clear of litter, not crowded on the tables, and airy. Good cocoons are made by worms that begin to spin on or before the thirty-fifth day; but those that are longer in beginning to spin have been so stunted in food, or so retarded by unfavorable weather, that their cocoons will always be imperfect. Perfect cocoons will generally weigh from the sixteenth to the twentieth of an ounce. We have often had them to weigh the sixteenth of an ounce, and would not call any perfect that did not weigh the twentieth. But, good cocoons when the crysalis is perfectly dry, will often be found to weigh only the twenty-eighth to the thirtieth of an ounce. The degrees of quality of imperfect cocoons are so various, that it is impossible to describe them. If they are soft and flimsy, though of full size, they are to be considered imperfect, according to the degree of softness, and depreciated in value, in the same proportion. If one end is soft, or not perfectly occupied by the fibre, appearing to have a hole in them partially covered or open, they are to be rejected as bad. If they are stained, which is often the case, by the crysalis having passed into the fly state and made an attempt to emerge by discharging a fluid on the inside, before it was killed, they are to be rejected as bad. And, finally, if the worms are sickly, their cocoons will be flabby, and generally small, light and imperfect. A first rate cocoon will weigh the sixteenth of an ounce, be of an oblong oval form, firm texture, and granulated surface; and according to the degree of variance from these qualities will be the imperfection of imperfect cocoons.

INDEPENDENCE.—Why may we not say something about independence as well as others? Are politicians the only independent class of men, or are farmers less benefited by the Declaration of Independence than others? Yet, we do not intend to indite a homily on the great political event the anniversary of which returned yesterday—that event and its anniversary will be remembered while the people of the United States enjoy the liberty asserted by it. But we would avail of the occasion to make a remark or two on the word independence, so much used at the present moment, so little understood, and the sense of which is so little practically felt by mankind. What is the meaning of the word? *Independent!* of whom, and of what? Who in this world, what nation on earth is independent? None—no, not one! The great Lydian monarch, "the richest of mankind," was not independent; neither was the Roman empire. Poor Cræsus could not buy, nor Xerxes conquer it. The truth is there is no such thing as independence. Every man is dependent upon his neighbors, every hour of his life, for something necessary to his comfort, if not to his existence; and every nation is alike dependent upon other nations, for something necessary to its independence! But if comparative independence,—a state in which the least possible dependence on others is required,—be what is meant by this much used word, then who are they that enjoy it? What class of mankind are in the least degree dependent on

others? The tillers of the soil, undoubtedly. They are the most independent of any men on earth; for they have the keys of the store-houses, and none can eat or enjoy any manner of human comfort, but by their permission. Though a wall as high as the clouds were to encircle his farm, and thus shut out the whole world, of what thing necessary to his real comfort, would it deprive the farmer? Nothing but the company and converse of the world, with a few luxuries deleterious to his welfare. The farmer is not only independent of all other men in a high degree, but he has also the highest degree of power over others. But, practically, in what does the farmer show his independence, and where exert his power? Does he not often sacrifice the one, and lend the other to those whose use in their own ambitious designs, satisfying himself with the slavish privilege of looking on and admiring, while he toils and sweats to raise means to pay the expenses of their gorgeous displays? When will the farmers learn to know their rights, and to feel the independence that really belongs to them? When will they learn the immensity of their power? We would not have them *exert* it; but we would be glad to see them understand their own strength—then, and not till then, will they really enjoy independence. We have said we could not wish to see the farmers exert the power with which they are invested, and why? Because, the speedy annihilation of all other classes of society must follow it.—Suppose the farmers of the United States were to organize as a party, and determine on any particular course, where is the profession or party that could oppose them? In such an event, all must succumb to the overwhelming numbers and power of the farmers. We could not desire, therefore, to see this lion aroused to the fury incident to a full knowledge of his power, but we should be glad to see him so far awakened from his lethargy as to enable him, occasionally, to shake the dew from his mane, and the gad flies and gallinippers from his body.

The Newbern Spectator assures the American Farmer that its quotation from Irenæus was *not* intended "to ridicule the statement relative to the produce of Mr. Willis' vine." On reading the certificate in the Farmer the passages in Irenæus recurred to its memory, and it sportively placed them in juxtaposition.

FOREIGN MARKETS.

LIVERPOOL COTTON MARKET.

May 21—This week, so far, the sales have been equally limited, and have not exceeded, in the five days 10,000 bales, which includes 500 Am. for export, and 200 Sea Islands on speculation. Cotton is not freely offered, consequently the extreme prices of last week have been realized. Some purchases have been made in bond, deliverable 1st June, and the sellers have obtained the greater portion of the benefits in the reduction of duty. We quote extreme prices of uplands at 62 to 75-8 a *ld.*—P. S. There is a good attendance of the trade here this morning, who are giving full prices for Cotton, which is not freely offered.

May 22—Rice is flat and lower, 137 casks new Carolina, offered at auction, were bought in at 32s 6d to 33s. 133 hhds Kentucky leaf Tobacco sold at 3d, demand rather limited.

Letters of the 24th state that the demand for Cotton was more extensive, the opening of the Scheldt having given an impulse to the market. Tar and Turpentine rather lower.

LONDON CORN EXCHANGE, May 22.

The arrivals are again, this week, more than equal to the demand, and the trade, consequently, very dull. Wheat was a difficult sale at Monday's prices, whilst barley and oats (for each of which there was a trifling demand) were a shade cheaper.

AGRICULTURE.

SYSTEM OF FARMING.

MR. SMITH: *Penpark, Va. June 12, 1833.*

Dear Sir.—Agreeably to my promise, I have sat down to give you the result of my experience in farming for forty years. I removed from the county of Loudoun, to Albemarle, in the fall of 1799, with but little experience in farming generally, and much less in improving worn out land. At that time the whole face of the country presented a scene of desolation that baffles description—farm after farm had been worn out, and washed and gullied, so that scarcely an acre could be found in a place fit for cultivation. It will be well to observe here, that there is a ridge of red land passing through the counties of Albemarle and Orange, whose soil was of the very best quality, and susceptible of the highest degree of improvement, but which had at the same time been *butchered* by that most horrible mode of culture adopted by the first settlers of this country. The practice then was to clear the land, to put it in tobacco for three or four years in succession, according to the strength of the soil, afterwards in corn and wheat alternately, or corn and oats so long as it was capable of producing any thing. They never ploughed in those days, but simply scratched the ground, and this too, right up and down the steepest hills, instead of horizontally, with those little one horse half share or shovel ploughs, until the whole of the virgin soil was washed and carried off from the ridges into the valleys. This is a very imperfect description of the face of the country at the time of my settlement here; I believe it would not be saying too much, if I were to affirm, that there had not been before that period, one good plough in the county. Col. Thomas Man Randolph, had commenced the horizontal ploughing on his farm; but, for the want of good ploughs, it was along time before he could succeed sufficiently well to induce others to adopt the same plan. Indeed, there were many who, though considered at that time good practical farmers, were disposed to ridicule it for years after Col. Randolph had adopted it. And here, since there has been some little discussion of late in regard to the question, who first introduced this mode of ploughing, I will take the liberty of saying, that there is no person in Albemarle who ever doubted, nor do I myself doubt, that although some considerable improvement may have been made by others since that gentleman adopted it, yet he is entitled to the whole credit of its original introduction, and for which he deserves a monument to his memory.

Suffice it to say, in regard to the condition of the country at the time I speak of, that it wore the most haggard, frightful, poverty-stricken appearance imaginable, never having had upon it either plaster or clover, or, as one might naturally judge from its looks, vegetation of any kind. We had but one alternative in this state of things, either to improve and restore the soil, or to remove to some new and better country; which latter course was the most common—the majority of farmers, after they had impoverished their lands, preferring to leave the improvement of them to others, rather than undertake it themselves. There is here, as in all other places, a great variety of opinions in regard to the best mode of improvement—the manner of ploughing, whether deep or shallow—the time of ploughing—the time and manner of applying manure—questions which must be decided according to circumstances, and not by a single invariable rule. There are some things, however, which may be considered as all important—such as a rotation of crops, a rigid and scrupulous attention to the collection and preservation of all the manure that can be obtained, and great care in ploughing; for good ploughing, in my estimation, is the first step towards the improvement of an exhausted farm.

I will now proceed to give you a more particular account, both of my practice and success in the busi-

ness of reclaiming exhausted land. The farm, which it is my lot to possess, lies near the town of Charlottesville, has been obtained by small purchases at different times, and now contains from two to three thousand acres. This tract of land is acknowledged by all to have been more completely galled and butchered than any other of the same size in this neighborhood. My practice has always been to plough as deep as possible, and according to my constant direction to my ploughmen (*men*, not *boys*, for I do not suffer boys to plough) is not to be afraid of ploughing too deep, provided the horses can pull the plough. For some years past I have made use of four horses in flushing the land, but from the great disadvantage they have labored under, in consequence of the very undulating surface of my farm, sometimes ploughing too deep, and at others too shallow—as for instance, in ascending a hill, the lead horses would draw the plough out of the ground, while in descending, they would plunge it so deep as to be unable to pull it at all—I have been compelled to use three horses at least; which is as small a force as any farmer should think of applying; notwithstanding even this mode has its objections, principally arising from the danger thereto, that the horses when turning, unless great care be taken, will cork themselves. Mine have been frequently injured in this way. The plough which I prefer to all others, is the bar share, called here the London bar share, which was first introduced into this neighborhood by myself. I do not mean to say, that there are not other ploughs equally good, but this in the end is the cheapest. For notwithstanding it costs something more than the M. Crumck, which is our next best plough, though not sufficiently strong for three horses in our rough soil, yet it will last three times as long. The bar share is now in much greater demand than any other, but unfortunately for us, there are very few to be had, not having any person in the county who understands the manner of making it. This plough not only does the best work, but does its work with more ease to man and horse than any other with which I am acquainted.

And here, permit me to say a word in relation to the question of deep or shallow ploughing, which I have seen recently discussed in the Farmer. My opinion, which is founded entirely upon experience, is decidedly in favor of the superior utility and value of deep ploughing. For about twenty years, I have been ploughing as deep as I could on the farm where I now reside, without having in a single instance injured the crop; and more than this, I have, in the mean time, restored the land from the most extreme state of poverty to that of at least good farming land; indeed, a great deal of it is as rich as is necessary for a wheat crop. The rotation of my crops has been once in corn, and twice in wheat, rye or oats in five years, giving two full years in five for clover, and in the mean time dressing the land twice with plaster, (or at least rolling all my seed of every description in plaster,) with from one bushel to one and a half the acre. By putting this quantity upon the clover, the spring after it is sown, ensures me a crop on almost all my land, sufficiently large to mow. Every acre of my farm not under cultivation is kept in clover. With respect to the production and the application of manure, I have never pursued any uniform course, but have been frequently making experiments. I was once inclined to believe, that no other way was right, but to haul it out and plough it under as soon as possible, not allowing the sun to shine on it more than could be avoided, and so strong had been the force of habit and of education, that I pursued this course for several years, without ever supposing for a moment that any other course was or could be right. But, as a large portion of my land had been so completely exhausted, and galled and ribbed by rains and bad treatment, that to put upon it manure in its rotten state would be worse than folly, I came to the conclusion, that it would be a better mode to cover all its deep sores with thick plasters of unrotted straw, carried directly from the machine. In

order to save labor and time, this straw was carried out as a return load while engaged in threshing the wheat; for our practice in this county differs from the common practice in many other places, especially at the north, in not stacking our wheat, but in taking it directly from the field to the machine. This mode has been forced upon us by the apprehension, that if it were allowed to remain for a long time unthreshed, say till the month of August, it would be destroyed, or at least materially injured by the weevil. But, to the point—I am fully of the opinion, that this description of land cannot be so well improved in any other way as in the one just mentioned, for by the time the coat of straw is completely rotten the land will possess sufficient life and strength to manufacture or produce its own covering. A few other experiments, which I have made in regard to manure, may be worthy your attention. In the fall of 1828, I commenced following my land, and carrying out my manure at the same time. The manure was spread and ploughed in with my large ploughs, but as I had a considerable quantity to haul, and some distance to haul it, I did not finish until some time after I had sowed my crop. I made, therefore, four different experiments—a part of the manure was ploughed in with the large ploughs—a part spread on the broken up land and harrowed in—a part spread on the surface after the wheat was sowed—and a part spread upon the snow, according to the practice which, as I am told, exists in Pennsylvania. The first experiment succeeded the best, and contributed most to the permanent improvement of the land—the second did not vary much in its results from the first—the third produced the greatest crop the first year—the fourth did not succeed at all, as it killed a great portion of the wheat.

In regard to such a valuable article as that of manure, it may be well to remark, that very few of us make more than half of what we really might make; and, after all, suffer a great deal of what we do make to be wasted, for the want of a little care. All that even our best farmers in Albemarle have attempted to do, is to collect all their corn stalks in some convenient place, to be used as litter for the farm pen during the winter, which, together with a few leaves from the woods, and a little refuse from the farm, is converted into manure. This is about all that we have done yet.

Before I conclude this letter I wish to add another remark, in regard to the subject of deep and shallow ploughing. This seems to be the more necessary, not only because public discussion is now awake, but because I have a fact to communicate, about which I am greatly astonished that so little has been said, and which may afford us some light. It is this—if you plough your land ever so deep, so much so as to hide every particle of the soil, by the next season it will have all returned to the surface without any subsequent deep ploughing—a fact, which I do hope some of your more experienced correspondents will explain for me. In whatever way it may be explained, it does seem to me to speak most powerfully in favor of deep, instead of shallow ploughing. In my view it is reduced to a certainty, that just so deep as the plough goes, just so deep the soil goes and no deeper. The question then comes to this, which is preferable a deep or shallow soil? about which there can be no dispute. When I first commenced the practice of deep ploughing on my farm, the people who passed along the road would stop and inquire, with great earnestness, whether I was not afraid of ruining my land. After expressing my conviction of its utility, they would most generally reply, that it might do for your wheat, but it would not for corn. But I can only say, that I have found it best for every crop. I would pursue this subject further, but I find my paper giving out. If what I have advanced will aid the interests of agriculture in any respect, I shall be happy. Yours, respectfully, and sincerely,

JOHN H. CRAVEN.

P. S. Our harvest has just commenced. In this

county, while we shall have more than an average crop of straw, we shall not have a half a crop of grain, and even that will be more different than any that I have ever seen, being infested with every thing that is bad—rot, scab, smut and rust. J. H. C.

(From the Genesee Farmer.)

RUTA BAGA.

To those who wish to try the Swedish turnip, and desire information as to its culture, we submit the following considerations, the result of some years' successful experience with this root.

The soil best adapted to the Swedish turnip is one of loose texture and dry, inclining to sand, gravel or loam. It should be rich, well pulverized and clean. A clover ley, covered with yard manure previous to its being ploughed under, is to be preferred.

The preparation for the crop consists in one perfect ploughing, a ley, a faithful harrowing, and the roller may be applied between the ploughing and harrowing with benefit.

The season for sowing is from the 25th June, to the 5th July. [In Maryland from the middle to the last of August is found the best season.] A cutting of early clover may be first taken off the ground.

The best method of sowing is with the drill barrow, an implement which costs ten or twelve dollars, and which comes in use for other purposes, in drills two and a half feet apart. With this a man will put in four or five acres a day. The crop may also be sown broadcast, or drilled in with a line and hoe, though the operation is more tedious, and, when sown broadcast, the expense of cleaning and thinning materially increased.

The quantity of seed requisite for the acre is one pound—cost seventy-five cents to one dollar—though if well drilled, half this quantity will suffice.

The after culture consists in thinning the plants and keeping the crop free from weeds. The plants should be thinned to eight or ten inches, as soon as they show the second or third pair of leaves, and it is important to have the first weeding performed early, as this not only benefits the crop, but saves subsequent labor.

The implement best adapted to the turnip culture are the cultivator, or horse hoe, and turnip hand hoe. The first is passed between the drills as soon as the plants show their second pair of leaves, and may be repeated at intervals with little expense and manifest advantage. It destroys the weeds, if applied in time, except on a strip of two or three inches where the plants grow, pulverizes the surface, and renders the soil permeable to atmospheric and solar influence. The operation of cleaning is finished with the hand hoe, the cutting part of which may be likened to the blade of a thin case knife, the two extremities of which are drawn out, turned up, united, and form the shank to attach the hoe to the handle. The advantages of this hoe are, that it does not gather the dirt and weeds, and may be drawn along the drills as far as the arms extend without being raised, and across the drill, between the plants to be retained, and almost wholly supersedes hand weeding. Two cleanings with the hoe generally suffice.

Gathering the crop is performed with the greatest economy of labor, by drawing the turnips by hand, and laying them separately across the drills, the roots of two adjoining rows towards each other, and then with a heavy knife, bill hook or like implement, strike off the tops with a blow as they lay, which is managed with great expedition. The roots are first gathered, and taken to the pit or cellar, and the tops, which are abundant, are then raked into small piles, and taken to the yard for the farm stock as they are wanted.

To secure for winter, pits are made in the field, upon dry ground, two and a half feet broad, and as long as may be convenient, and of two to four feet in depth. These are filled, and the roots piled above the surface, in a roof-like form, till they terminate in

a ridge. A slight covering of straw is then given, and the whole covered with earth, two feet or more in depth. A salutary precaution is then to make holes, with a bar, at intervals of three or four feet, upon the ridge, through the covering, that the rarified air which will be generated may escape. This may be partially closed with a wispy straw. Another precaution is to cover the mound with a coat of yard manure early in December, the better to exclude the frost. [In Maryland it is only necessary to gather the roots for convenience of feeding, while the ground is frozen, as they stand out perfectly.]

The product, under good management and on a suitable soil, is seldom less than six hundred bushels per acre, and often much more, of roots, besides a heavy burthen of tops, of which neat cattle are very fond.

Use.—This turnip is far more nutritious than the common turnip, keeps much longer, and is greedily devoured, cooked or raw, by horses, cows, sheep and hogs; and is withal a very excellent vegetable for the table, particularly from January to June. We are still feeding to cows and oxen (May 23) of the crop of last year. Our cows have eaten them daily for nine weeks, and yet the turnip taste has not been perceptible either in their milk or butter—the cows having daily access to salt. To the sheep his bandman this root will be found peculiarly serviceable, if fed to his flock in winter and spring.

Of all root crops, if we except the common turnip, this is the least exhausting, occupies the ground the shortest time, is cultivated with the least expense, is saved with the least care, and we think makes the greatest return in food for animals. B.

(From the Maine Farmer.)

ON THE SMUT IN WHEAT AND THE CAUSE OF IT.
MR. HOLMES: *Winthrop, April 17, 1833.*

A late number of the Maine Farmer, contains an article from the Albany Argus signed H. It is a well written article, "on the smut in wheat and the cause of it." [See Am. Far. vol. xiii, page 412.] In that article the writer discards the generally received opinion respecting the cause of smut in wheat—advances the novel hypothesis that smut is produced by a bug which he names the smut bug; and relates his experiments and observations to substantiate his theory, but omits giving what is of much more vital importance to the farmer, viz. a remedy for smut.

In this communication I intend to state what I suppose to be the cause of smut in wheat—give the results of some little experiments, by way of proving what I know to be a complete preventive, and make some observations touching H's theory, which may tend in some measure to refute it. I have supposed that pure wheat like various other productions of the earth, might degenerate and produce smut, or, that owing to some casualty, such as cold, heat, wet or disease it might fail to blossom, and produce smut.—These causes acting separately or conjointly may be the first moving cause of smut, while smut itself, being an efficient agent in propagating its kind, becomes the continuing cause.

When I was a little fellow, I observed my father washing wheat to sow. I asked him why he did this? He replied, "to rid it of smut." I observed that after he had skimmed off all the kernels of smut from the first water, he washed it thoroughly in the second and third waters.—I asked him why he washed it so much after he had taken off all the kernels of smut. He replied, "that particles of smut adhering to the wheat will cause it to produce smut." Young as I was, I had imbibed the idea that smut germinated, and was too incredulous to relinquish my notion of the subject. To satisfy myself I took a number of kernels of smut rubbed them in my hand and added a handful of the washed wheat. On one side of the field where the pure wheat was sowed

with small stones (boy like) I walked in a few feet of ground and sowed my smut wheat thereon. In wheat harvest I had a fine crop of the bane of wheat, while the wheat which grew contiguous was entirely free from smut. I then felt that inexperience should not be too confident—that experience is "the best school-master," and from that time became an advocate for washing wheat to sow.

My father had ever foliowed that practice and had ever raised pure wheat, although he had frequently bought impure seed. Indeed he had never seen a head of smut for a long time, and entertained the idea that it grew in the same head with the wheat, and when he first saw the smut head his curiosity was aroused.

In the spring of 1831, I contracted with a gentleman farmer to take charge of his farm. I could not conveniently obtain any other than smutty wheat for seed. My employer was not slow to condemn this "mess of smut." I told him perhaps I could learn him "a thing or two" concerning smut. I washed this wheat thoroughly, sowed it and raised from it excellent pure wheat. From the result of the first experiment it appears reasonable to infer that smut does not germinate, but, by adhering to the wheat, contaminates or diseases its roots and blade, imparts to them a vitiating principle which prevents the head from blossoming and consequently produces blighting of the kernel. This is abundantly proved as there was no kernel of smut in the seed sown, and as there was nothing but pulverized smut in it, the smut must have been produced by some process similar to that above described.—The result of the second experiment satisfactorily proves that if smutty seed be washed smut will be prevented.

From the result of both these experiments we see the fallacy of H's supposition that smut is produced by a bug. In the first case the smut was rubbed hard in my hand and reduced to a powder. Had there been eggs or grubs, as H states, they must have been mashed and destroyed.—But even supposing they had been preserved and had hatched into smut bugs, why did they not overleap their scanty domain and commit their lawless depredations upon the circumjacent territory? In the second case the wheat was washed by a brook in the wheat field and the smut left remaining. Had the eggs in this smut hatched, the bugs would have gone in quest of their natural food and would have showed their strong partiality for the wheat nigh the brook. But nothing of this was discovered. H's experiments prove that smut is the ailment of the bug, that it riots upon it and generates in it and nothing farther. If this is allowed to be a proof that the bug is the cause of smut, from analogy he might reason that the woodchuck is the cause of clover, because he inhabits the clover and feeds luxuriantly upon it. H states, that wheat, sowed on land manured with the manure from the yard, into which the straw and chaff of smutty wheat had been thrown the year previous, produced abundance of smut. This is perfectly reconcilable with my position. The wheat caught the contagion from the smut in the manure as is fairly proved to be the fact in my first experiment.

Now, Mr Editor, allow me, through the medium of your paper, in plain farmer style, to address myself to my brother farmers. Gentlemen, I have not the temerity to suppose that I can instruct the experienced. I would modestly appear before my superiors, not supposing that I am originating ideas for the majority of farmers. But as often as I see smutty wheat, or smutty bread upon the table, I am furnished with ocular demonstration, that there are farmers who do not know there is a remedy. In fact the very existence of smut in every considerable quantity, calls for something on this subject, and let this be my apology.

Now if you have smutty seed wheat, just take it and a couple of tubs, a bucket, a sieve, and a quantity of slaked lime, or unleached ashes, to a brook or

pool of warm water. Cold water you would find rather uncomfortable to the hands. Then take off your coat and roll up your sleeves farmer like, put about half a bushel into one of the tubs, fill the tub with water, stir the wheat so that the smut may rise, and skim off the smut from the water. Repeat this operation of stirring and skimming until all the kernels of smut have risen and been skimmed off, and then pour off the water. Wash your wheat in a second and third water, rub it *hard* in your hands so as to detach the particles of smut from the kernel, not do it at the halves by stirring in with a stick as I have seen some do, pour off the water, drain the wheat over the sieve, empty the wheat into the spare tub, add at the rate of four quarts of slaked lime or a peck of unleached ashes to the bushel and your wheat will be ready and fit to be sown. Lime or ashes not only serves as an aliment for the plant but may tend to counteract the influence of smut and absorbs the water from the wheat so that it can be easily sown. Without it wheat would fall in bunches from the sower's hand. Wheat may remain in lime sometime without injury, but it should not remain long in ashes as the alkali tend to destroy the vegetating principle of the grain.

Farmers, follow these directions and our ears will no longer be grated by the dissonant cry of smutty wheat—our eyes no longer behold upon the table the black loaf of *schite* bread, and our nauseated and disordered stomachs no longer furnish indubitable evidence that farmers are heedless and negligent in preparing their seed, and in not furnishing their wives and fair daughters with wholesome, pure and white flour. PLUGH BOY.

HORTICULTURE.

(From the Genesee Farmer.)

LECTURE ON HORTICULTURE

Delivered before the Buffalo Lyceum, in March, 1832.

BY LEWIS F. ALLEN.

It was remarked by the celebrated Dean Swift, that he who caused two blades of grass to grow where but one grew before, should be considered a public benefactor.

If such be the fact, those who have made great improvements in the cultivation of the soil, ought to reap a rich reward of public gratitude; and well would it be for the whole human family, if all wars and contentions could be confined to rival emulation in the peaceful arts, and all their implements of destruction be converted into the plough share and pruning hook. What a delightful scene for the philanthropist! What a field of contemplation for the philosopher and christian! And if ever such happiness be the lot of this world, those who cultivate the soil will be the first to invite, by their peaceful occupation, its blissful era.

The regular course of our studies will this evening present before us the subject of horticulture, or the cultivation of the garden, with its legitimate productions of esculent fruits and vegetables.—For our present purposes, it is not necessary to pass through an examination of the various vegetables which are in common use among us; or into the dissection of their component parts.—Their utility is too well understood to need diffuse remark; and as our present object is to disseminate a correct taste, and more general attention to their cultivation, we proceed at once to our subject.

The cultivation of gardens has partially existed from a remote period in the world; but the art has been brought to its present perfection within the period of a few centuries. For ages after the earth was inhabited, we have no reason to suppose that the cultivation of the ground was in any other than the rudest state; and history, as far as it can be traced, is almost silent on the subject. The authority of holy writ presents the history of our first parents in a gar-

den; but the term is so general, and the word "garden" might so aptly apply to many delightful valleys in the voluptuous climate of Western Asia, that we can have no definite conception of its appearance and productions, as compared with the "gardens" now in cultivation among us. And from the known and gradual improvements in the melioration to domestic uses of the vegetable kingdom; and the exceedingly rude state of the world for many centuries thereafter, we may fairly presume that but little was known of the vegetable world at an earlier date.

The ancient patriarchs, with their numerous families and tribes, led a pastoral life; subsisting chiefly on the milk and flesh of their flocks, and the simplest fruits and vegetables of the earth, which in that luxuriant soil and mild climate flourished in great abundance. As the earth became more populous, and the people assembled themselves into colonies and nations for mutual protection from the assaults of those more powerful or barbarous than themselves; and as subsistence by plunder became more precarious, they resorted to the cultivation of the soil, in common, with directing their attention to the mechanic arts; and as these last improved, the former kept a slow yet regular pace beside them. For many centuries, even after the soil was cultivated for subsistence, the inhabitants were not scattered in sparse settlements over its surface; for so general was the practice of war and depredation, that no safety was found but in congregating the people into towns and cities, which were strongly walled and fortified. They daily went without the walls to cultivate the adjacent fields, or inclosed a sufficient quantity of ground with their habitations to suffice for their more pressing necessities. It would indeed appear that the various and tempting fruits, scattered through the land, should have invited the attention of those people to engage early in their cultivation. But the genius of the universal world seemed wholly bent on the acquisition of power, and the more direct means of its promotion; and their labors in time of peace, owing, perhaps, to their numerous collections into cities, were more directed to architecture, sculpture and painting, than to the improvement of the soil.

The people of ancient Greece, while rearing those immense structures of art, whose very ruins challenge the admiration of the world, were ignorant of the simplest classification of vegetable nature. And the more refined Romans, whose profound literature and correct taste in the finer arts, stood for centuries without a rival, knew but little of the rich and abundant treasures of the vegetable world. True, eminent instances of individual inquiry and investigation into vegetable physiology are recorded; but so long as the national taste was pursuing another channel, these inquiries could make but little progress. War, eloquence and the arts, by which to perpetuate their achievements, were the prevailing tastes, of the period in which they live; and the more humble, peaceful, and useful studies of the vegetable world were neglected; and like the mechanic arts had arrived to but a rude state of development, as the world emerged from the dark ages into the more benign and liberal era which first dawned upon its people.

As mankind have become enlightened in science and the arts; as their views have been expended by study and investigation; and as the benign influences of social order and moral virtue have spread over the nations, new discoveries have been rapidly made in the great mine of vegetable nature, and her hidden treasures have brought forth, producing abundantly to the benefit and luxury of man. At the present time, the art of horticulture has become expanded into a science; and what had ever before been deemed by the general world as consigned to the unlearned tiller of the soil, or to the secluded rustic, as a subject too vulgar for philosophical inquiry, has of late received the minutest and long continued investigation from our most enlightened physiologists and natural historians. And to the general student, no

science or study has afforded more peculiar satisfaction. The vast phenomena of vegetable nature, as she gradually unfolds it to the inquiring gaze of her votary, presents continued objects of profound admiration; and things, common as the air we breathe, when examined by the clear light of science, develop such strange and pleasing features, that we silently wonder at our former lack of curiosity.

The natural productions of the earth are exceedingly simple; and it is matter of much doubt whether any considerable portion of the grains, pulses, roots, herbs, and fruits, which are now produced in such endless profusion and variety, were, when first discovered, either palatable or desirable food. Many of the most important grains were hardly a resemblance to their present appearance or value. The wild pea and the bean, as they climbed up the luxuriant wild weeds in their native grounds, were scarcely food for the birds or quadrupeds. The potato, when first discovered in the new world, was a small bulbous root not larger than a filbert; and the sweet potato, one of the richest, most nutritious roots in existence had hardly enough of virtue in its wild state to bring it into notice. The cabbage, with all its fine variety of cauliflower, kale, and broccoli, was hardly larger than the leaf of an ordinary clover. Also, in like unimportant state were our present most esteemed garden vegetables. The plum, the cherry, and the apple, were as we now know them in their native wilds, of little value, and but little removed from the yet humbler fruits which grow around them. The fig, the olive, the orange, and the melon, as they existed in the wild regions of their nativity, had barely attraction sufficient to justify attempts at their improvement. Yet by the judicious cultivation of their several kinds, transplanted into a genial soil, and the ingenious improvement of their natures, they have become eminently subservient to the uses, necessities, and luxuries of the human family.

If it be asked how this great variety and profusion of vegetable nature, that we daily see around us, has sprung into existence while her first productions seemed to be dispensed with so sparing a hand; I answer, it is the result of human ingenuity, aided by a friendly climate, and a generous soil, in developing and maturing their faculties and powers. As the mind became expanded, and began to inquire into the formation and properties of the vegetable life, experiments were commenced; art and ingenuity were put into requisition; accident also contributed much to the discovery; and shrewd, intelligent observation lending its aid, great results were in time wrought out; continual improvements have been made, and our present luxuriant and bountiful productions are the consequence.

Before the art of printing was discovered, the science of vegetable physiology was but little known, and confined principally to the more polished nations of the earth. The Carthaginians were considered in their time as the best cultivators of the soil. Some of the ancient Greek authors wrote treatises on agriculture, and on the cultivation of fruits. Virgil wrote his polished poem entitled the *Georgics*, on the subject of rural economy and improvement; but for the want of correct scientific knowledge in those times, strange mixtures of popular superstition, error, and prejudice were more or less blended in all their writings. And many of these relics of a benighted age, I regret to say, are prevalent at the present period. To allay those prejudices, and correct those errors, and to promote intelligence, is one great object of all our study and investigation; and well would it be for our nation were our whole people guided, on this subject, by the simple voice of experience, and the plain undeviating principles and laws of nature.

We now inquire in what manner have the present great variety of vegetables been multiplied from their original stock? The character of all vegetables, from their close and intimate relation to the different

parts and composition of the soil and atmosphere, are easily susceptible of change. Their reproduction by seeds; transplanted into different soils and climates, together with mechanical or accidental causes, may create a slight difference or modification of their properties or relations. We are to understand that the *genera*, or *species*, of a plant is never altered by cultivation. It is only the character, and the uses it may be susceptible of, that become refined or improved thereby. The crossing, or admixture of the pollen of one vegetable, with the farina of another, is a further and the principal cause of variety in the vegetable world. Seeds of one plant may be sown in the immediate vicinity of another. The productions, or fruits of these plants may be the same as those from which they spring; but if the farina of their flowers be mixed, the seeds of either kind may produce fruits differing from both; or having the blended character of the two. The operation is perfectly easy, and may be readily understood. Every male flower springing from a vegetable, has in its centre, and issuing immediately from the stem, a *stamen*, so called. This *stamen* is covered with *pollen*, which is a fine white, yellow, or brown dust.—This *pollen* being carried by the wind, birds, insects, or the hand of man, and mixed with, or scattered upon, the *farina*, or inner surface of the female, or fruit bearing flower of the same plant, or that of another capable of admixing with it, imparts a share of its character to it, and hence the production of a different variety. In this manner, horticulturists have multiplied many fruits and vegetables to an almost infinite extent. Climate and soil have, however, as before observed, an important bearing on vegetable character; and many fruits and garden vegetables have so great predilection for certain locations, that their flavor becomes immediately changed on removing them to other locations, although the principal characteristics of the soil and atmosphere is, to appearance, nearly the same. When, therefore, we take into consideration the remote period of time that vegetables and fruits have been cultivated; their natural tendency to run into new varieties, and the easy process by which they are multiplied; their great utility in administering to the support, to the convenience, and the luxury of mankind, together with the pleasures arising from their cultivation, it is not surprising that we now see them produced in such endless variety and profusion.

The utility of a well cultivated garden needs no comment. To all who are possessed of ground, and have a family to provide for, it is no less a convenience than a profit. For edible purposes, garden vegetables are invaluable; and are all important to the body for sustenance and health; and the form of obtaining them fresh from the ground where they grow, is an important item in their use. To those who have sufficiency of ground, the want of a garden is altogether inexcusable; and if the cultivation of one be neglected, a proper regard to the health and comfort of their families requires a different practice. Many persons who depend upon their supplies of vegetables and fruits from market gardeners, are not sufficiently careful in selecting them. Vegetables which are green, should, to be healthy and nutritious, be perfectly fresh. Those which are wilted and stale, are unhealthy, and decidedly worse than none. *All succulent plants*, when used green, are in a rapid state of growth and development. Their stalks, leaves, and roots are full of active juices, which have been recently elaborated; and if the sources of life be suddenly checked by plucking them from the earth, and exposure to the air, they soon wilt from a rapid evaporation of their juices, and the process of decomposition immediately begins. They are thus, in many instances, rendered actually injurious. Salads, radishes, asparagus, greens, cucumbers, peas, and many others, may be named. Some are more liable to injury from exposure than others. We will here briefly illustrate this position.

Vegetables consist of, or are made up of carbon, oxygen, hydrogen or water; and occasionally, azote or nitrogen. This last is a most poisonous gas. During the day, when the sun or atmosphere is acting powerfully on vegetable life, oxygen and hydrogen, being the basis of the nutritious and saccharine qualities, is rapidly given off through their numerous pores. The azote or nitrogen remains. Now this is the case with wilted vegetables. The fine, succulent, and nutritious part is decomposed into the atmosphere, and the worthless parts are retained. Some plants so treated are actually poisonous; and all are more or less injured. Those who understand the subject can at once detect them by the taste.

This is one great reason why cholera, dysenteries, and cholies are so prevalent in the months of July, August and September; particularly in large towns and cities; when wilted, stale, and, therefore, worthless vegetables are in continual use; and the markets and shops are filled with miserable unripe fruits, bruised from careless treatment in carrying them to market; for which purpose they are picked from the tree in a green state, and crushed into almost rottenness by jamming, jolting, and packing together in great quantities. All such fruits are positively injurious, in promoting those diseases, and ought in no instance to be used. Good, well ripened fruits are food that we all love. Taken in moderation, they are healthy and in many instances nutritious. They contain in larger or smaller quantities, sugar, acids, mucilage, and sometimes gluten. The various kinds of wood on which they grow, absorb or take up from the soil and atmosphere the different sustaining principles of their fruits, for which they are peculiarly adapted. These properties, while the fruit is in progression, are in a crude imperfect state; and in unequal or *improper* quantities (if we may be allowed the expression.) But as the time of ripening and perfecting the fruit approaches, the various parts of acid, sugar, and mucilage, with their carbon, oxygen, and hydrogen, assume their proper proportions, and the fruit is fully matured. It is now most fit for food, and will remain in that situation longer or shorter according to its kind, till decay commences. It will, therefore, be seen, that unripe fruits, like stale vegetables, are unprofitable as well as unhealthy articles of food.

Fruits seem to have been created for our rational enjoyment; and in a country where they may be so easily reared, we are hardly to be excused if we do not obtain more or less of them. To those who know how easily they may be cultivated, it is matter of surprise at the apathy which exists on the subject. We all run with avidity after the oranges of the tropics, and think them remarkably fine fruit. So they are when plucked in golden ripeness from their native trees; but were the West Indian to view us expatiating on the luxuries of an orange as sold in our markets, he would at once laugh at our ignorance. Those which we purchase are plucked green from the tree; and while on their voyage hither, obtain a sickly, premature ripeness, so that we taste none of the delicious flavor of their native clime. But we may have fruits in our own gardens far preferable to those, with little trouble and expense. The apple and the pear; the plum and the cherry; the different kinds of melon; the smaller fruits and berries, nearly all grow with us in great perfection. Even the peach and acetarine give us a partial share of their delicious qualities; and the vine, with its yellow and purple clusters, is often seen hanging in luxuriant festoons in our gardens. Still with all these facts staring us in the face: and these tempting fruits almost within our reach; we neglect their cultivation, and spend our money for the unripe trash brought from a foreign land and offered in our stores. The poor, unripe, and tasteless Malaga grapes are annually imported into our towns, and sold to our people for three shillings a pound; while those of abundantly better quality and finer flavor can be raised in our own gardens and yards in two years from a naked slip, which any one may

obtain for the asking. It has often occurred to me, that if we lived under the reign of a Roman Emperor, who should happen to take the cultivation of fruit into his consideration, that all those who have opportunity and neglected to cultivate, would be forbidden to eat it, so easy is it to be obtained. Even in our large cities of New-York, Philadelphia and Boston, are large quantities of the finest grapes, and other small fruits, raised in the yards of the dwellings; and I know of many families, who, after supplying themselves, and giving largely to their friends of these delicious fruits, send many dollars worth to market. And shall it be said that we, who have room and to spare, shall neglect a subject so pleasant in its practice, and so easy in its execution? Yet such is the fact. But few, comparatively, among all our town and country people, cultivate the finer fruits; and many are almost deterred from the cultivation of even the few they have, from the uncertainty of rearing them to perfection, and preserving them from the plunder of the licentious, or the importunate begging of their thriftless and neglectful neighbors. For the credit and enjoyment of our people, these things ought not to be. A correct taste for cultivating gardens and fruits should prevail throughout the land; and enough, and to spare, of the choicest bounties of Heaven would be at our command.

Another, and a powerful argument why fruits should be generally cultivated, is the tendency they have to keep us temperate. Lovers of fruit are seldom fond of intoxicating drinks; and were it plenty and cheap in our markets, and throughout the country, its influence in correcting a taste for alcoholic liquors would be most salutary. From the grape, which grows spontaneously in many regions of our country, good wines can be made; and how much better the innocent and palatable liquors of our native vine, than the spurious mixed, poisonous, and intoxicating wines continually imported by our merchants; even with certified, sworn, and sealed labels too, and called cheap, or light wines! Yet in this paltry traffic, are our unsuspecting and credulous population wheedled out of millions annually, as the sacrifice of their gullibility! It does not become the present occasion to look farther into the history of this impoverishing trade; but a slight acquaintance with the important wine countries of Europe, would readily convince us of their incapacity to furnish us with a tithe of the liquor called wine that annually deluges our land.

Another circumstance may be mentioned as not of little consequence to those who are in the habit of cultivating fine fruits and vegetables: it is the exceeding facility by which at particular seasons they obtain friends! Now if the cultivation of these were universal, it is altogether probable that the calls and visits of our friends would be tolerably uniform throughout the year. But when only a few individuals in a village or neighborhood cultivate choice fruits and plants, and that too in any considerable quantity, it is quite amusing to see with what kindness many persons, who previously have been almost perfect strangers, now become their most intimate and particular friends. As the fruit season arrives, they receive a multitude of calls from most obliging acquaintances, who are peculiarly solicitous about the health of their families, and are always happy to drop in and taste their choice fruit; and be on exceedingly intimate terms with them at that particular season of the year. But let that season pass, and the once thronged and hospitable door, where so much *disinterested friendship* has been recently professed, become silent as the Capulet's tomb! I once knew a gentleman who cultivated a large peach and plum garden, which yielded him great abundance, and it cost him hundreds of dollars a year to give them away in receiving genteel visits and tea drinkings during the fruit season, from persons he little knew, and who never cared a fig about him. I have known others too, who were so continually annoyed with the importunity of their neglectful neighbors in begging their fruits, that in

self-defence they were obliged to cut down and cast away, like the barren fig, beautiful trees, to prevent offence by refusing to have their fences destroyed and grounds trodden over, and to suffer the various inconveniences which the presence of their fruit subjected them to. These instances, I am happy to say, are becoming less frequent, and it is with pleasure that they need no personal application within my present knowledge of our neighborhood; and in well bred communities, the right of the cultivator to his productions is as strictly recognized, as that of the merchant to his goods, or the banker to his purse. Public opinion is rapidly correcting these errors, and "it were a consummation devoutly to be wished," that the rich and luxurious fruits of our land should become as plenty and as cheap as our soil and climate are susceptible of producing them.

It does not come within the scope of our present subject to remark upon the several kinds and varieties of vegetables and fruits which may claim a share of our cultivation. Their existence is so common; their various properties and uses are so well known; and the general process of their culture is so well understood by many of our enlightened horticulturists, and so thoroughly laid down in the books which are to be found on the shelves of all our booksellers, that a repetition of the ordinary process of rearing them would be trite and uninteresting. It yet remains, however, for us to remark upon the means to be used, and the benefits that may result from the prosecution of this important branch of our subsistence, convenience and enjoyment.

We have seen that the productions of our gardens are of prime necessity for our culinary purposes; and that by the aid of skill, ingenuity and science, immense improvements have been acquired in their character, and many vegetables, literally worthless in their original growth and locations, have by being transferred into proper soils, and receiving suitable culture, become of primary importance for our use. It becomes then, all who have the prosperity of our great community at heart, to foster a taste for the cultivating and improvement of our gardens, and to bear testimony both by word and deed to their importance. The morals of a people can be very correctly judged, by the appearance of their grounds and gardens. The virtuous man loves to see the bounties of the Almighty blooming and bearing their rich burthens around him. He delights to nurse their tender shoots, and train them up to full and fruitful maturity. How redolent of power! how indicative of wisdom, the formation of the vast vegetable world! and how does the mind glow with admiration, to witness the noble plants of its training, grow on, expanding and developing new features and new virtues through each successive year of their cultivation! Let then, every virtuous mind acquire a taste for an employment so instructive, so useful, and amusing; and let gardening become a part of the employment of all such as have time and opportunity.

As a means of promoting a desire of this kind, may be mentioned the formation and existence of Horticultural societies. These have done infinite good in promoting a correct taste in garden culture; and in all places where there has existed a spirited society, do they greatly excel in horticultural productions. True, numerous excellent gardens may be found where no such associations exist; but by thus producing a community of feeling, and a rivalry in production, a deeper interest is excited; and garden specimens are often elicited to the astonishment of even the most credulous. In all this rivalry and emulation, there need be nothing adverse to the kindest feeling. It is a competition of a high moral tone, and such as has often deeply engaged the loftiest minds. Let it not be supposed that base, a groveling propensities, or weak and diminutive intellects, are to be thus whiled into temporary amusement by associations of this sort. It is a game for deep science; cool, deliberate investigation, and practical skill: a school

for the naturalist, the chemist, and the philosopher; and a study also for the simplest, and most unsophisticated mind. Think you the names of Chilton, and Mitchell; of Quincy, and Lowell, and Story; and Spencer, and Hosack; of Buel, and Le Roy, and a host of other brilliant and reputable names would associate in such societies for purposes unworthy their attention, or genius? Yet these men have unbent their mighty minds from the severe toils of their professions; and relaxed their grant labors to go into honorable and equal competition with the humblest of their fellow citizens; and have felt high gratification on receiving the meek reward, which in justice to their skill, their productions had entitled them. There is something of high moral virtue, of deep-toned patriotism, in the example of our great men thus exerting their influence in promoting a taste among our people for these humble and innocent, yet highly useful and happy employments. To see those whom wealth, and talents, and high character, have rendered conspicuous in our land, meet on equal terms for manly competition with their own gardeners and many of their poor yet respectable neighbors, and offer the labors of their own hands as examples of their vegetable productions; and after receiving the award due their industry, ascend the desk and discourse so richly upon the utility and practical character of their associations, savors much of a benign and happy influence. And such are the results of a cultivated and enlightened taste for horticulture. But for this, how many rich fruits and plants, now blessing with their existence the human family, would still have lingered along, worthless shrubs on the plain, or thriftless weeds in the desert! May we not then with signal benefit fit to ourselves, and advantage to the community around us, imitate such high example? Let the work be commenced. Let those engaged in horticultural labors among us, associate for the purposes of laudable competition and improvement, and the beneficial results of our industry will rapidly evince its utility.

Another important result has emanated from such associations: the publication and dissemination of horticultural papers. Until within a few years past, not a paper of the kind could obtain support in our land. Now, thanks to the enlightened taste and public spirit of our people, several valuable papers of the kind are established through our country. Yet many of these I regret to say, are sustained far beneath their merits; but it may be hoped that their own salutary influence will excite a spirit of inquiry and improvement in the subject, until the art of cultivation shall be brought to full perfection. I can most freely recommend to your attention a publication of the character I have remarked, and with full confidence will name to you the *Genesee Farmer*, published at Rochester; which, so far as it has progressed, has indicated a practical skill, and a promise of utility highly creditable to our state, and honorable to its conductors.

May we not, then, hope that the time is not far distant, when the science of cultivation shall be taught as of primary importance in our schools; when, instead of being consigned to the ignorant and obscure as a subject unworthy minute inquiry to the scholar, or of investigation to the learned, as we have reason to fear it too often has been, its practice may become universal, and its productions widely disseminated—that the most untutored may understand its labors and the most destitute may share its bounties.

COTTON SEED OIL.—A correspondent of the New York Courier gives the following account of this oil:—It is as limped as water, I have seen it burn, and no one can discover a difference between it and the best hard winter strained oil; for machinery, it cannot but be superior to Olive oil, being perfectly free from glutinous particles; as a paint oil it has properties beyond the common Linseed, the oil cake is more nutritious for cattle than Linseed oil cake, and the sediment makes the best of printing ink.

(From the Genesee Farmer.)

EFFECTS OF THE LAST WINTER IN CAYUGA COUNTY, NEW YORK.

Greatfield, 5 mo. 27, 1833.

Although the winter in many respects, was much milder than the preceding, yet several of my shrubs have suffered more severely. A double *Althaea* (*Hibiscus syriacus*) which has stood since 1825, appears to be entirely killed. The holly, though well eased in evergreens, has lost every cat, and several inches of the ends of the branches. Who in the Genesee country has been more successful? I despair of succeeding with this fine tree.

Rhododendron ponticum, and *Syrax glabrum*, though quite as well sheltered as in former years, are entirely destroyed; and *Aralia spinosa*, which in the preceding winter, had only lost a summer's growth, now appears to be killed to the ground, *Filix agnus castus* has fared no better; neither have two varieties of the pomegranate (double and single) also well banded with evergreens. Only a small part of *Periploca graeca* is left alive.

An experiment on *Hydrangea hortensis* was made by a very liberal application of henlock boughs, to ascertain if it could survive without *lying down*; but it is dead to the ground. *Hydrangea quercifolia* is undoubtedly a harderier plant; and its inability to withstand the frost in England, has not been exaggerated, I would ascribe the difference to our hot summers in maturing the wood. It was rather more damaged than in the preceding winter, which may be imputed to a diminished vital energy, in consequence of having blossomed last summer: it was the first time.

On the contrary the Isabella grape which was left on the trellis in the finest condition, though it had nearly perished in the winter of 1831-2. The black Orleans [black cluster?] the only exotic vine which I left uncovered, is but slightly damaged, and will doubtless bear fruit, for the first time under such exposure. Among the shrubs which have wintered better than in former years. I may mention *Bignoni radicans*, *B. gra diflora*, *Kerr a japonica*, *Coronilla emerula*, *Jasminum humile*, and *Lonicera flexuosa*. The last has new branches several feet from the ground, which has not happened before in five years.

The warm weather in the first month caused the blossom buds of the peach and of the apricot to start; yet although the thermometer was afterwards down nearly to zero, the damage was less than I anticipated. About two thirds of the apricots were killed, but a smaller proportion of the peaches. Notwithstanding there is young fruit in abundance on the trees.

D. T.

(From the New England Farmer.)

LARGE APPLE TREE.

There is at present standing in Duxbury, county of Plymouth, an apple tree remarkable for its age, size, and fruitfulness. This tree is over forty feet in height, branches very wide spreading and large, the circumference of the trunk eight inches from the ground is sixteen feet; at four feet from the ground it spreads into two branches, one of which is nine feet in circumference. These again spread, the larger into three, the smaller into two branches, each of which equals an ordinary apple tree in size. It covers with its branches a space of ground thirty-one paces in diameter. In its most fertile days, it bore seventy-six bushels of apples for winter use, and not many years since, the fruit made ten barrels of cider, besides thirty bushels for the cellar. Its ascertained age is near one hundred years. It still is quite productive and sound, the upper and lower branches bear alternately. The fruit is of a pleasant sour, rather tender, but keeps well all winter.

(From the Genesee Farmer.)

TO DESTROY THE TURNIP FLY AND OTHER INSECTS IN HOT BEDS.MESSRS. EDITORS: *Potter, May 25, 1833.*

I think your correspondent, a Practical Gardener, does not recommend the very best expedient for destroying the turnip fly and other insects in hot beds. Because, firstly, I think his expedient is very tedious. Secondly, it is very uncertain. Thirdly, if a part escape they will inevitably destroy the young plants.

I deem the following much better adapted to the object: Take a tea spoonful of sulphur or brimstone reduced to a coarse powder—put it on a small piece of paper and lay it in the hot bed—then light a piece of brown paper and lay it burning on the sulphur—it will soon set the sulphur on fire, then put down the sash close. The burning sulphur will destroy all the oxygen in the frame and pervade every part of it, destroying every living thing within it. After two or three minutes the sash may be raised and the sulphuric fumes blown out and no insects will be left to do mischief.

Such is the conviction derived from practice and theory. Yours, &c. R. M. W.

(From the Virginia Farmer.)

WILD SILKWORM.

Extract from a letter to the secretary of the Hamilton county Agricultural Society.

"I will now furnish you with an interesting extract from a letter of my friend in Paris, Doct. L. Deslongchamps, and from his pamphlet or memoir on the *wild silkworm*. I have I believe, already mentioned to you, that when I shall be able to publish the third part of my work on silk, I intend to abridge that pamphlet as an appendix to it—because the importance of the subject of wild silkworms, the value of their silk, and the great facility with which they can be raised and are already propagated in China, renders it desirable to diffuse all matters of knowledge and experience respecting them, that we can obtain. But for the present I give you only the following extract from said letter, with a drawing of a suspended cocoon, which, however, will give but an imperfect idea of this kind of wonderful work.

"North American people whose extensive lands produce so many analogous vegetables and insects to those of China, may possibly find the same kind of wild silkworms and cocoons as those of Bengal and of the neighboring districts. I invite you to call up the attention of agriculturists and naturalists, to caterpillars and moths, or butterflies, of unusual size and colors; specimens of the present were brought by M. Lamarepiquet, who has travelled and remained more than seven years in different parts of those countries. The cocoons herein exemplified are as big as small hens' eggs, and unlike them are elliptically rounded at the ends, excepting a little protuberance at the part in which the pedicel is affixed, they are from 24 to 22 lines long, and 14 in diameter; this suspending appendage is cylindrical and one-twelfth of an inch thick, somewhat bent at its lower end, blackish, and made up of clues glued together by a gummy resinous fluid, at its base or loop it forms a perfect ring of 3 or 4 lines around any secondary or subsidiary branch below which the lower fabric is to be formed and protected, when this cord is terminated in a proper length its clues or fibres divide in circular and diverging directions to form the outside and glazed layer of the cocoon, much like the net work spun by the caterpillar one over the other, these differ, there are, from our ordinary silk cocoons, which are copiously furnished with a kind of tow, different from silk, which has to be removed before they are reeled.

"These cocoons are rich in silk, for they weight without the crystal, 64 grains a piece, being much more than our ordinary cocoons, which at best weigh

but 6 or 8 grams. From this extraordinary inclosure, the metamorphosed insect issues in the same mode as our silk moth, performing during a short period of existence its natural and last acts of laying up, or fecundating its eggs. This wild caterpillar grows to the size of 4 inches in length, and 3 in circumference, is of a beautiful green color, interlined by red and yellow bands, and by tubercles of the same color, each bearing a long hairy forep.

"A few celebrated naturalists have seen and described this remarkable kind of silkworm. Mons. Deslongchamps has communicated to us a printed dissertation, or memoria, upon all that relates to its classification, its habits, food, and the means of raising it in a domestic way, but at present we will content ourselves to notice its name *Bombyx Papha*, and that of its favorite tree *Ichnu us anguba*.

"I hope, dear sir, that this season will be more healthy and fortunate for your fellow citizens, and for you and your friends, to whom I tender my best wishes and respects. F. PASCALIS."

TRINIDAD.**MINERAL PITCH.**

Captain J. E. Alexander, F. R. G. S. &c. gives the following account of a mineral curiosity in Trinidad, in the Edinburgh New Philosophical Journal.

One of the greatest natural curiosities in this part of the world, is the lake of asphaltum or pitch in Trinidad, situated about thirty-six miles to the southward of Port of Spain. The western shore of the island, for about twenty miles, is quite flat and richly wooded, and though only one or two houses are perceptible from the sea, the interior is well cultivated, and several small rivers, which empty themselves into the Gulf of Paria, afford great facilities for the transport of sugar to the ships which anchor off their embouchures. As Naparima is approached, and the singular mountain (at the foot of which San Fernandez is situated) is plainly distinguished, then the shore assumes a more smiling aspect, here one sees a noble forest, there a sheet of bright green points out a cane-field—cocoa nut and palm trees are sprinkled over the landscape, and gently wave their feathered foliage; now and then a well-built house appears close to the water's edge, with a verdant lawn extending from it to the sea, and the ground sometimes broken into smoothness, and then slightly undulating. The beauty of this part of Trinidad is very great, though, from some undrained swamps, poisonous malaria exhale.

At Poin La Braye are seen masses of pitch, which look like black rocks among the foliage; they also advance into the sea. At the small hamlet of La Braye, a considerable extent of coast is covered with pitch, which runs a long way out to sea, and forms a bank under water. The pitch lake is situated on the side of a hill, eighty feet above the level of the sea, from which it is distant three-quarters of a mile; a gradual ascent leads to it, which is covered with pitch in a hardened state, and trees and vegetation flourish upon it.

The road leading to the lake, runs through the wood, and on emerging from it, the spectator stands on the borders of what at first glance appears to be a lake containing many wooded islets, but which on a second examination, proves to be a sheet of asphaltum, intersected throughout by crevices three or four feet deep, and full of water. The pitch at the sides of the lake is perfectly hard and cold, but as one walks towards the middle with the shoes off, in order to wade through the water, the heat gradually increases, the pitch becomes softer, until at last it is seen boiling up in a liquid state, and the sides of the feet become offensively warm. The air is then strongly impregnated with bitumen and sulphur, and as one moves along, the impression of the feet remains on the surface of the pitch.

During the rainy season, it is impossible to walk over the whole lake, nearly, but in the hot seas in a great part is not to be approached. Although several attempts have been made to ascertain the depth of the pitch, no bottom has ever been found. The lake is about a mile and a half in circumference; and not the least extraordinary circumstance, is that it should contain eight or ten small islands, on which trees are growing close to the boiling pitch.

In standing still for some time on the lake near the centre, the surface gradually sinks till it forms a great bowl, as it were; and when the shoulders are level with the general surface of the lake, it is high time to get out. Some time ago a ship of war landed casks to fill with the pitch, for the purpose of transporting it to England; the casks were rolled on the lake, and the men commenced filling, but a piratical looking craft appearing in the offing, the frigate, and all hands went in chase; on returning to the lake, all the casks had sunk and disappeared.

The flow of the pitch from the lake has been immense, the whole country round, except the bay of Grapo (which is protected by a hill) being covered with it; and it seems singular that no eruption has taken place within the memory of man, although the principles of motion still exist in the centre of the lake. The appearance of the pitch which has hardened, is, as if the whole surface had boiled up into large bubbles, and then suddenly cooled; but where the asphaltum is still liquid, the surface is perfectly smooth.

Many experiments have been made, for the purpose of ascertaining whether the pitch could be applied to any useful purpose. Admiral Cochrane, who was possessed of the enterprising and speculative genius of his family, sent two ship loads of it to England; but after a variety of experiments, it was ascertained that in order to render the asphaltum fit for use, it was necessary to mix such a quantity of oil with it, that the expense of the oil alone would more than exceed the price of pitch in England. A second attempt was made by a company, styled the Pitch Company, who sent out an agent from England; but finding that Admiral Cochrane had failed, and being convinced that any further attempt would be useless, he let the matter drop.

FENCES.

Extract from Gen. Wm. H. Harrison's Address to the Hamilton county Agricultural Society.

In noticing the improvements in rural economy in our own neighborhood, it is painful to observe how little has been done towards substituting more durable fences than those which are in common use. The old worm fence, unsightly and disfiguring as it is to our farms, and withal insufficient and costly, from its great waste of timber, still continues to be the favorite. A change, however, must soon take place, for the country will not much longer supply the materials for constructing it. If any fence composed of rails is used, the best is certainly that of double posts, confined with a cap, and having a worm of one foot to prevent the rails from passing each other. It is much cheaper than the single post fence, more lasting and more easily repaired. If posts or stakes of locust or mulberry can be procured, they will last many years. But the wood of the *Catalpa*, affords perhaps a more lasting material than either, is of very quick growth, and easily cultivated. This valuable tree is indigenous to the lower part of Indiana, and grows to a very large size on the Wabash, and some of its branches. Its ability to resist decay has been sufficiently tested in the neighborhood of Vincennes, both under ground and in contact with it.

Over the little stream of the Desha, five miles from Vincennes, one of these trees had fallen, before any emigration had taken place from any of the states to that place. It was certainly lying there in the year 1785, when a colony of Virginians, from the south branch of the Potomac, emigrated to that place,

and for many years served as a foot-bridge over the stream. I was informed by a gentleman of undoubted veracity, that it was only partially decayed a few weeks since. The same gentleman (Dr. Hiram Dickson) informed me, that a bar post, which was made by his father, and put in the ground at a little stock-ado work, which was erected in the year 1770, and which has been taken up and removed to his own farm, by his brother-in-law, Major Andrew Purcell, is still sound, and answers the purpose for which it was originally intended.

The catalpa is much esteemed as an ornamental tree, but I do not know that it has been used as a timber, any where but in the vicinity of Vincennes. It is now growing very luxuriantly on Mr. Short's and my own farm, raised from the seed."

Prices Current in New York, June 29.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 12 a 15; Upland, 11 a 13; Alabama, 11 a 14. Cotton Bagging, Hemp, yd. 13 a 21; Flax, 11 a 15. Flax, American, 8 a 9. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.62 a 5.57; Balt. How'd st. 6.12 a 6.25; Rhd city mills, — a —; country, 5.75 a 5.87; Alexandria, 5.75 a 6.00; Fredericksburg, 5.62 a 5.75; Petersburg, 5.62 a 5.75; Rye flour, 3.75 a 3.87; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a 17—. Grain, Wheat, North, 1.12 a 1.16; Vir. — a —; Rye, North, .73 a .75; Corn, Yel. North, .50 a —; Barley, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, .75 a .9.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep.

The stock now on hand for sale, is the following:

One RAM, three years old, from which Mr. Barney bred last year—a first rate animal. Price \$100.

One RAM, one year old; equal to the other according to age. Price \$75.

Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address, L. I. HITCHCOCK, American Farmer Establishment.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, nineteen months old, by Gloster, out of a first rate full bred cow. He is not above middling size, but is a very beautiful and perfect animal. Price \$250.

One full blood bull, two years old—a very fine animal. Price \$250.

One full bred Heifer, two years old, now springing, but the calf will not be valuable, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form; calves from two to six weeks old. They will be sold for \$50 each.

Address

L. I. HITCHCOCK,
Amer. Far. Establishment.

TWO IMPORTED MALTESE JACKS FOR SALE.

These animals were purchased in Malta in June, 1832, for two officers of the U. S. ship Concord, in which they were imported. The selection was left to one of the best judges in the island, who advertised three months previous to purchasing, for the largest and best bred Jacks, without regard to cost—more than one hundred were offered before a choice was made. They are now about three years old, and stand, one 13½ and the other 13½ hands high, and will yet grow three or four inches; their color is black with fawn nose, eyes and belly. In size, action and vigor, they were believed to be unsurpassed by any Jacks in Malta, and they have been pronounced by good judges, the finest ever brought into the United States. It is deemed unnecessary to say any thing about the superiority of the Malta Jacks; it being well known that they are of the high bred stock of Persia and Arabia.

These animals may be viewed and every information respecting them, may be obtained, by applying to L. I. Hitchcock American Farmer establishment, Baltimore. The price is \$600 each.



HARVEST TOOLS, WHEAT FANS, &c.

SINCLAIR & MOORE, have in store, and are manufacturing a general assortment of HARVEST TOOLS, among which are

100 WHEAT FANS, double and single geared.

300 Grain CRADLES, with Seythes complete. This article is made of the best and most durable materials, and will be warranted as such.

50 doz. Grass and Grain SNEATHS.

30 do. Hay and Manure FORKS.

30 do. RAKES and Wooden tined FORKS.

SCYTHES and Sneaths, hung ready for use.

SICKLES, English and American Seythe Stones, Strickles, &c. &c.

Their Stock of CASTINGS, Agricultural Implements, Garden Tools and SEEDS, is as usual full and complete.

Also, just received from Europe, two bales, containing Lucerne and Ray Grass, Cabbage, Radish, Lettuce, and many other valuable SEEDS of last year's growth. From the appearance of this lot of Seed; and the respectability of the establishment from which they were imported, they can with the greatest confidence recommend them. May 24.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various Sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Berland's Patent Spring Coneave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—An advance of 12½ cents will be noticed in our quotations of Howard street flour; the wagon price is fluctuating from \$5.56 to \$5.62½. Wheat remains about the same as before, while corn has advanced two or three cents, owing to the stinted supply. Indeed there is very little grain coming in.—Rye and oats remain as before.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—1 line yellow, 18.00 a 25.00.—Virginia, 4.00.—Kappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 452 hhds. Md.; 174 hhds. Ohio; 8 hhds. Ken. and 2 hhds. Vir.—total 636 hhds.

Flour—best white wheat family \$6.75 a 7.25; super; Howard-street, 5.75 a 5.81½; city mills, 5.75 a —; city mills extra 5.87½ a —; Corn Meal bbl 3 62½; GRAIN, best red wheat, 1.15 a 1.18; white do 1.25 a 1.31; —Corn, white, 62 a 63, yellow, 64 a 65;—Rye, 65 a 67 —Oats, 36 a 38.—Beans, 75 a 80;—PEAS, 65 a 70 —CLOVERSEED 8.00 a —TIMOTHY, — a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50.—Herd's — a —Lucerne — a 37½ lb.—BARLEY,—Flanders 1.37 a 1.50.—COTTON, Va. 11½ a 13—Lou. 14 a 14½—Alab. 11½ a 13—Tenn. 11a. 12½; N. Car. 12a. 13; Upland 13—14—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russian, 18 a 190; Country, dew-rotted, 6 a 7c lb. water-rotted 7 a 8c.—Feathers, 37 a 37½;—Plaster Paris, per ton, 4.25 a — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial; Value of Cocoons, their Quality and Preparation for Market; Independence—Foreign Markets—Letter from John H. Craven on his System of Farming, as the result of his Experience for forty years, with some Observations on Deep Ploughing, Hillside Ploughs, &c.—Culture of Ruta Baga—On the Smut in Wheat and the Cause of it; Remedy against Smut—Lecture on Horticulture, delivered before the Buffalo Lyceum, in March, 1832, by Lewis F. Allen—Cotton Seed Oil—Elkets of the Winter in Cayuga County, New York—Large Apple Tree—To Destroy the Turnip Fly and other Insects in Hot Beds—Extract from Dr. L. Deslongchamps' Memoir on the Wild Silkworm—Account of a Mineral Fitch in Trinidad—Fences—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

The American Farmer,

Edited by GUNN B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum; due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

5. DIRECTION OF LETTERS.—Address all business letters concerning the Farmer, the store, or the agency, to the proprietor, 41. Irvine Hitchcock, Baltimore, Md.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JULY 12, 1833.

LARGE RADISHES.—We have now at the Farmer office, three radishes raised by Mrs. Forney, of Reisterstown, that measure as follows:—the first, 18½, the second, 16½, and the third, 15 inches in circumference. Two of them are of the long turnip form, and the other of the long kind. They appear to be hybrids, between the Spanish and common scarlet.

EARLY GREEN CORN.—We have for several years had a variety of early corn of a very extraordinary kind, both as to quality and the season at which it comes into use. We have never failed having it on our table about the first of July, till this year, and this exception was caused by an accidental omission to plant till the 20th of May—and it is even now in full flower, and will be ready for use by the 20th inst. A few persons who have tried it this year, have informed us of the result.—Mr. P. J. Frieze's gardener, sold some of it in our market, on Friday, 21st of June, and Mr. Frieze had it on his table, the 23d of June. Mr. Wm. H. Foot, of Alexandria, writes to us under date of June 25, that he had been eating this corn for more than eight days; and that he has no doubt of having it next year, in the first week of June. He says it is small, yet it is sweet and good. The ears of this corn are about eight to ten inches long, and one and a half, to two inches in diameter. The grain is pure white, and of a good size and depth, and of the most delicate flavor—it is in all respects incomparably better than the small yellow corn, heretofore the first in season; and three to four weeks earlier.—Notwithstanding the great superiority of this corn, we have heretofore been unable to induce our gardeners to adopt it, except in a very few instances.—It will work its way, however, for gardeners will hardly stand by and see one of their profession monopolizing the market, and selling green corn at 37½ cents a dozen, for three or four weeks, as has been the case with Mr. Frieze's gardener this year, without making an effort.

This corn is the result of an attempt at improvement made by the Editor of the American Farmer. He obtained the earliest white corn to be found, and by planting early, and each year selecting the first formed ears for seed, has brought it to the state above described. It grows only four to five feet high, to the top of the tassel; has generally two to four ears on the stalk; bears planting three feet apart, and three stalks in the hill.

HORTICULTURAL SOCIETY OF MARYLAND.

July 10, 1833.

The Council in the name of the society offer the following premiums to be awarded for specific objects during the ensuing year.

For best Strawberries, at least two quarts, to be produced on or before 1st Saturday of June.	\$3
Best Raspberries, three quarts, 2d Saturday in June,	2
Best Gooseberries, six sorts, one pint of each,	4
Best Cherries, four sorts, one quart of each,	2
Best Apricots, two sorts, half dozen of each,	3
Best Pears, six sorts, half dozen of each,	5
Best Foreign Grapes, four sorts, two clusters of each,	5
Best Native Grapes, four sorts, two clusters of each,	5
Best Plums, four sorts, one dozen of each,	3
Best Apples, (early,) four sorts, half peck of each, on or before 2d Saturday of July,	3
Best Apples, (late,) six sorts, half peck of each, after the 1st of February,	3
Best Peaches, (early,) 2d Saturday of August, four sorts, one dozen of each,	5

Best Peaches, (late,) after 3d Saturday of September, four sorts, one dozen of each,	\$5
Best Figs, two sorts, one dozen of each,	2
Best Quinces, two sorts, half peck of each,	2
Best Nectarines, two sorts, half dozen of each,	4

Best Cauliflowers, two at least, to be presented, on or before 2d Saturday in April, 5 |

Best Asparagus, (forced,) two bunches, fifty stalks in each, 2d Saturday in March, 5 |

Best Mushrooms half peck, to be produced before the end of April, 5 |

Best early Cabbage, (York kind,) six heads, 2 |

Best Sea Kale, two bunches, twelve in each, 5 |

Best Rhubarb, for tarts, two bunches, twelve in each, 5 |

Best Beets, at least one dozen, before 1st of June, 3 |

Best Carrots, two bunches, twelve in each, 2d Saturday in June, 2 |

Best Lettuce, (forced,) four heads, 1st Saturday in March, 3 |

Best Lettuce in open ground, six heads, 2 |

Best Onions, from seed in one season, one peck, 3 |

Best Cape Broccoli, four heads, 3 |

Best Egg Plants, at least two, 2 |

Best and largest Tomatoes, one dozen, 3 |

Best Cucumbers for pickling, one hundred, 3 |

Best early Celery, two bunches, 2d Saturday, in October, 2 |

Best Asparagus in open ground, two bunches, 2 |

Best winter Canteloup Melon, two best, 3 |

Offered by an Individual.

For the best Potatoes, one bushel, a silver cup,	\$10
For the best Sweet Potatoes, one bushel, do.	10

Each must be accompanied with a statement showing the kind of seed used, and how cut; the quality of the soil, whether manured or not, the kind of manure, and how applied; the season, whether favorable or otherwise, in a word, the entire process of culture and mode of treatment, otherwise no award.

The committees on fruit and vegetables are prepared to receive for examination any thing that may be sent if deposited at the Farmer office, No. 16 S. Calvert street, on Saturdays, between the hours of eight and nine in the morning. They will report accordingly, and a record will be kept of every thing presented.

ORNAMENTAL DEPARTMENT.

Best collection of Camellias in flower,	10
Best do. Roses, do.	5
Best do. Pelargoniums, do.	5
Best do. Hyacinths, do.	3
Best do. Tulips, do.	3
Best do. Carnations, do.	3
Best do. Dahlias, do.	3
Best do. Chrysanthemums do.	3
Best do. Primula polyanthus, do.	2
For the finest and rarest Exotic Plant,	5
For the best conducted Green-house.	20

By Individuals.

For the best and rarest Tropical Epiphyte, or Air-plant, (orchideous) in flower when exhibited, with account of native country, habit and mode of treatment,	\$10
Best collection of Ericas or Heaths in flower, at least six kinds, (E. Mediterranea and rubra excluded,) with account of culture and treatment,	10
Best dozen sorts of Auriculas in bloom,	3

Competition for these premiums, free to all citizens of Maryland, and of that portion of the District, north of Potomac.

Published by order of the Council,

H. F. DICKEHUT, Sec'y.

To whom apply for further information.
 Editors throughout the state are requested to insert the above.

SHEARING.—Monday and Tuesday last were the days appointed by the proper authorities for performing the annual operation of sheep shearing. At an early hour, accordingly the ceremonies commenced. The number of candidates for the shears were probably seven or eight thousand; and this number would have been far greater, had the flocks been spared by the tremendously destructive storm in March last. On the previous Friday and Saturday, the sheep had been collected from every quarter of the island, driven into the great fold at Miacomet, (the site of an ancient Indian settlement about a mile from town,) selected by their respective owners, placed in separate pens, and subjected to the process of washing in the large pond contiguous. After this preparatory ablution, they were then ready to "throw off this muddy vesture of decay" by the aid of some hundreds of shearers, who began to ply their vocation on Monday morning, seated in rude booths, or beneath umbrageous awnings ranged around the circular labyrinth of enclosures, wherein the panting animals awaited the divestment of their uncomfortable jackets.

The whole ground, occupied by what is termed the "great shear pen," embraces about one square mile.—This space, partially covered with the unshorn and their contented lambs, and in other spots exhibiting multitudes stripped of their fleece, and clamorously seeking their wandering young, presented to the eye and ear of the stranger, sights and sounds somewhat rare. There is something picturesque and unique in the arrangement of the accommodations for those who are engaged in the principal business of the day. Besides these sheds or awnings, there are commonly pitched as on this occasion, some half dozen large tents outside of the great enclosure, furnished with divers holiday refreshments for those who are not particularly particular touching the quality of their viands or of their company. Within and around these tents is carried on all the actual revelry that attends this otherwise quiet carnival: for among the working shearers, industry and sobriety are the order of the day.

We have heard, however, of no disorderly acts, even among the most merrily disposed of the visitors. Both days were remarkably fine; and the whole scene seemed to be highly enjoyed by the numerous strangers who honored our island with their presence—among whom we were very happy to recognize the Rev. President Kirkland, formerly of Harvard University.—*Nantucket Inquirer.*

FOREIGN MARKETS.

LIVERPOOL COTTON MARKET.

Friday Evening, May 31.—On Friday last we raised our quotations ½d per lb. on nearly all descriptions; and we now find it necessary to raise them still further; namely, 2d on American and ½d on other sorts, making an advance altogether during the last fortnight of 3-8d on American, and ½d on other kinds. At these rates spinners, and dealers have taken during the week about 21,000 bags, speculators 7,000, exporters 2,100, making the aggregate sales 30,100 bags. In addition to the above, there was, on Friday night last, a disastrous fire, which consumed 2500 bales of American, nearly 400 of them being fine Orleans, of choice gin marks, which can ill be spared in the present state of our stock of that kind.

At the close of the week, and to-day, there has been a sufficiency of middling quality offered for sale; good remaining comparatively scarce as heretofore.

LONDON, May 28.

Rice.—In rice there is little alteration; mid. white Bengal has been sold in parcels at 11s to 12s. This day by public sale 1,506 bags ordinary Bengal, mid. and broken 11s 6d to 12s, all sold; no alteration in price.

Cotton.—The cotton market continues very firm in price but the purchases are not extensive. The public sale on Friday, 878 bags Madras, sold freely at steady market prices.

AGRICULTURE.

(From the Virginia Farmer.)

PRIZE ESSAY.

ON AGRICULTURE IN VIRGINIA.

BY C. W. GOOCH, OF HENRICO COUNTY.

It has fallen to the lot of the present race of mankind, to live in an age of improvement unparalleled in the history of the world. The arts and sciences have been cultivated to a degree of perfection, and are developing results that had never entered into the imagination of the most sanguine enthusiast of any other period. The intellect and industry of man have made all nature subservient to his purposes. Steam has almost annihilated space; machinery has overcome most of the obstructions of nature, and promises to multiply, to an indefinite extent, articles of comfort and necessity. Revolutions in the moral and political, as well as physical condition of our species, strike the attention in whatever direction we turn our eyes.

But is it not remarkable, that, at such an era, we look in vain for corresponding improvements in AGRICULTURE—that first and noblest of human pursuits? In some of the old countries of Europe surprising advances have been made; and, in several of the northern and eastern states of our confederation, the people have become sensible of the importance of the subject, and are in “the full tide of successful experiment” of an improved system of culture. If, in Virginia, we may congratulate ourselves that several counties, neighborhoods and detached individuals are following these examples, it is questionable whether they are not counterbalanced by the retrograding and desolate appearances that are so often met with in other parts of the state. Take the state altogether, it does not appear to me to improve at all; certainly, not *pari passu* with its population, morals or intelligence. For my own part, I cannot see how it should, under such an accumulation of retarding causes.

The limits of such an essay as this do not admit of a full discussion of these causes. Some of them will, however, be briefly adverted to; since a knowledge of them may be necessary to the proper application of remedies.

Ours is a new country, originally of great fertility. To account for its exhaustion, it will be necessary to look back to its settlement, leaving the intelligent reader to recollect many things which I must omit.

The country below the head of tide water, which now exhibits so many forests of young pines, and so many deserted fields of broom sedge and briars, was the first settled part of the state, and bears more of the destroying marks of man than any other portion. It has also given subsistence to more persons; and has been the hive whence proceeded the great majority of the settlers in the middle and western parts of the state. It gave birth to, and raised more than double its proportion of that swarm of Virginians who have peopled an empire in the west and southwest; and it still furnishes more than its ratio of the emigrants who cross the mountains. Its soil was exceedingly fertile when first stripped of the primeval forests. The aborigines exterminated the first settlers, and nobly warred against their successors. After the settlements were considered secure, and emigration from the mother country had increased nearly to inconvenient numbers, the exasperated Indians kept them within narrow limits, and compelled them to cultivate their lands without rotation of crops or any ameliorating system. The settlements, nevertheless, progressed with the increase and wants of the population, driving the Indians before them. In this way, parts of lower Virginia were nearly exhausted before the settlements reached the mountains. But the tract of country above the head of tide water scarcely felt this Indian pressure; for, when the Indians were

driven into the hills, and found the tide of white men rolling upon their retreating steps, they took refuge at once beyond the Blue Mountains. The advancing settlers then spread out, and located themselves wherever they pleased. The laws permitted them to acquire ownership over land at the price of a few shillings per hundred acres. The policy of these laws was to encourage emigration from abroad and people the country as rapidly as possible. In one respect these laws had a pernicious effect on the agriculture of the state. They enabled the aristocracy, then numerous and wealthy, to locate and appropriate to themselves and their heirs, vast tracts of the most fertile lands; which, for several generations, were left uncultured, or were rented out to persons, by whose unsparring cultivation they were the sooner impoverished; and after, as well as before the Revolution, it had a tendency to keep up an inequality among the people. May not too great a reduction in the price of the public lands, now held by the United States, have a similar tendency, and cause a still stronger stream of emigrants to issue from the old states? This is an incidental question which cannot escape the solicitude of a Virginian at this moment. But it belongs to politics, with which this essay has but little connection.

Of all the causes which have produced the present dilapidated appearance of Virginia, and prevented agricultural improvements, the most operative have been the cultivation of tobacco and the existence of slavery; I mean negro slavery, in contradistinction to white slavery! Whilst I shall speak freely of the disadvantages of the *one sort of slavery*, as coming within the proper sphere of my remarks, I cannot feel authorised to go out of my way to comment on the other. All that I ask is, that improper inferences may not be drawn.

It is probable that seven-tenths of the land that has been cleared east of the mountains has undergone the scourge of the tobacco crop. Tobacco has been the staple of Virginia from its settlement. Its culture was greatly encouraged by English and colonial legislation, and has not lost its importance on the statute book of later times. Formerly it was a sort of cash medium of remittance to the mother country, and a circulating currency among our citizens. The *inspectors' notes* passed as readily as do the bank notes of the present day; and individuals gave their bonds for tobacco as often as for money. The exhausting effects of its culture arise as well from its heavy draits upon the soil, for the juices which contribute to its size and weight, and its oily, narcotic qualities, as from the necessary process of tillage. The land is stripped of every thing, down to the cover of decaying leaves; the rich vegetable mold that had been accumulating for centuries is then scraped up into hills, mixed with a portion of the soil from below. For many years past, previous coulturing has been found necessary, in consequence of the injury done, and compactness given to the soil, by the long tramping of domestic animals. This mold, thus suddenly exposed to the atmosphere, the rain and the sun, is soon evaporated, or washed into the valleys. Being soluble in a great degree, its evaporation is, in my opinion, as great as its consumption in every other way; for it rarely washes off under the tobacco crop, except from steep hillsides. The elevation of the tobacco hills cause them, before shaded by heavy plants, to dry quickly, both by sun and wind. To this we may add the frequent stirring of the ground when the plant is young, by the process of weeding and hilling up.

Here, by way of digression, I must be excused for a few remarks, which would seem to have a more appropriate place elsewhere. But as they apply to this mold,—this young and tenderest part of all soils,—I insert them in this place.

The vegetable mold found on the top of all virgin land, varies in thickness, according to circumstances. But these circumstances involve a philosophical in-

quiry, into which the limits of a fugitive essay do not permit me to enter. Why is it that the leaves of the forest so rapidly decay in the rich woodlands of the western country, and that they are covered with grass? Is not this the case sometimes in the forests of Virginia? Why do the leaves of the walnut, and some other trees, decompose so rapidly in all situations? and why is the ground about them richer than that adjacent? The mold on the top of new land ought never to be broken up and exposed, if it can be avoided. On the contrary, it ought to be turned under and mixed with the under soil. This process will be a little difficult in new ground; but the benefits resulting from the mixture and fermentation will more than compensate for the trouble. I would recommend that such land be prepared as well as possible, and planted in corn, without destroying the cover of leaves by the barbarous and common practice of raking and burning. Corn is a vigorous plant, and with the aid of hoe work, will be greatly benefited by the half-decayed twigs, leaves and wood, which cover our virgin land. Neither wheat nor tobacco will grow so well amidst the trash of a new ground. The working will intermix the whole mass of litter with the mold and a small part of the next stratum. And thus when the corn crop comes off, the previous stirring and amalgamation of the mold, leaves, twigs, rotten wood, and a part of the sub-soil, will be a preparation for after crops. It is true, that the greater the quantity of litter the less corn will the land yield. If we could spread lime or marl, or even the more common article of plaster, upon it, before coulturing and working, the corn crop would be relieved from its pale green, sickly appearance, and give more grain, and that ripe. The frosts of the next winter will prepare this land for a crop of tobacco or small grain. If the soil be good and the owner wishes to make tobacco, he will get more the next year, and even the year following, than he could have made the first year, after the old plan of *raking and burning*. We have sought, as our ancestors did, every mode of destroying the vegetable mold upon our lands, and of the materials out of which it is produced. My idea is, that with a farmer, or even the tobacco maker, who has lots or flats, it would be best to put his new land, managed as I have described, in small grain the second year, followed up by clover and plaster the third and fourth years. After this it will have yielded him a fair return, be richer than when cleared, and be capable of producing a good crop of any thing he may wish to cultivate. And it may be progressively improved by a proper rotation, if there be a clay foundation; if not, it can be kept *productive* and comparatively rich. The chief difficulty in reclaiming exhausted land arises from the absence of putrescent vegetable matter, which it originally contained, and which has been destroyed by severe cropping, bad tillage and close grazing. It is in vain that nature annually attempts to renew this essential food of plants, when the rapacity of man and beast unite to defeat her efforts. But to proceed.

Tobacco leaves but little offal or manure; and it comes off the ground so late in the fall, that no sheltering or improving after crop follows it. No crop remains so long on the hands of the cultivator, or requires such constant and fatiguing labor. It is generally from twelve to eighteen months from the sowing of the seed to its arrival at market. All this time it requires constant attention, if not the constant application of labor. The planter formerly relied upon it as his only source of income; for he seldom made corn for sale, and often less than he wanted; and the wheat crop went to make up deficiencies, pay taxes, &c. In this respect there has been a favorable change within the recollection of the writer. Woodlands adapted to tobacco have now become scarce; and it is chiefly raised on manured lots and rich flats. Necessity has thus driven the planters to the new practice of taking care of manure; but they devote nearly all of it to their tobacco lots. More attention

is now paid to grain crops than formerly. The three shift system is the one commonly pursued, by which each field is improperly said to rest one year in three; but under the kind attention and constant presence of all the four-footed animals on the farm. It, however, gets a little respite after harvest, when the stock are turned into the grain fields to glean them, and destroy the young after-growth of weeds and grass, which provident nature throws up as a protection from the sun, and as a fresh supply of vegetable matter to sustain the growth of the next year. In the rotation of crops, she sets us a beautiful example. Look to the various productions she sends forth on new land, and especially when we destroy each production. The next is always different from the immediately preceding one. This land-destroying, Virginia system of husbandry, has been practised by almost the whole community until within a few years, and a majority of our people still pursue it. And is it to be wondered at, that after the destruction of so much of the soil by tobacco, and such long perseverance in this system, our lands wear out, and yield such scanty returns for the labor of the husbandman?

If you examine the plantation of the tobacco maker, you find every appearance of poverty or unpardonable neglect. The owner will acknowledge that things ought to be and might be better; but that he has no time to spare, owing to the pressure of his crops, particularly his tobacco crop, which interferes with all his other operations throughout the whole year. There is much truth in his excuses; for in January, February and March, he is clearing new grounds; preparing and burning plant beds; fencing; manuring, and fallowing tobacco lots; sowing oats, ploughing, and preparing corn land; and, either stripping or picking tobacco; perhaps both. In April, May and June, his toils begin to assume more interest, and require more exertion; his whole crop of corn is to plant, replant, thin, weed and cultivate; the tobacco hills are to be made, turned, cut off, and the first plantings made. The old crop of tobacco is yet to be finished prizing, and hauled to market, if not previously done; experience having proven that the longer it is kept before prizing, the sooner and better cured it will be—especially for shipping. Harvest is now at hand; but that period of industry and festivity to the mere farmer, brings with it sleepless toil and accumulated cares to the planter. The replanting tobacco, the topping of that which stood well, and the most careful tillage of the whole with the hand hoe, press him on the one hand; whilst, on the other, his late corn is not yet laid by, and his grain requires cutting. From the pressure of the corn and tobacco, the grain is too often literally mowed down and shocked about the field in a still more hurried and slovenly manner, to be half destroyed by winds and rains. Throughout the months of July, August and September, not a moment's respite is enjoyed. The tobacco crop has to be gone over more than a dozen times in the laborious operations of topping, succoring, worming, working, cutting, piling, removing to the houses and curing. The small grain must be hauled up and stacked, and when the depredations of the weevil leave no other alternative, the wheat is gotten out and carried to market. The fodder soon has to be secured, and this comes on just with the cutting of tobacco. During the other three months of the year, the better securing of the fodder, the gathering and housing of the corn, and the sowing of the next year's crop of winter grain, leave no leisure time to the poor planter. The tobacco, although housed, must be closely watched; the latter cuttings cured; and then commence the tedious operations of striking, stripping, assorting and bulking away. Besides these conflicting objects of attention, there are many others that demand the care and attention of the planter.—The whole circle of the year is one scene of bustle and toil, in which tobacco claims a constant and chief share. No time can be devoted to the planting of fruit and ornamental trees—to ditching—cleaning

up waste and reclaiming galled spots—making and spreading manure on the grain fields—deep and careful ploughing—sowing clover and plaster—or providing comfortable shelters for stock in the winter. The dwelling house, yard and garden enclosures and all the out buildings too often fall into decay for the want of some trifling repairs, which the crop hands might make, if they had time. The plantation soon looks tattered and almost desolate—galled and gullied hill sides and sedgy, briary fields show themselves in every direction. The profits from the destruction of one plantation, are applied to the purchase of another and of more negroes. The new one is put in charge of an overseer on shares, who soon brings it to greater sterility and desolation. It is in this way that most of the best lands in Virginia have been brought to their present condition, and have been, then, deserted by the destroyers.

But the existence of negro slavery among us, has, in a great degree, influenced the mode of destroying our lands, and hastened its accomplishment. In former times the exactions of the master were only limited by his cupidity. In this respect, a favorable change has taken place. Our slaves are now as well fed and clothed and enjoy as many comforts as the laboring class in other countries; and they have improved proportionably in their appearance and intelligence. It is not my purpose to touch the dark question which involves their future destiny. Its agitation has, already, on two occasions, roused a state of feeling which verged to desperate extremes. Whatever evils may attend it, the *right of property* can never be permitted to be questioned by others.

The possession of slaves has had too great a tendency to make the owner and his family unwilling to take upon themselves any part of the drudgery of out-door business; and too many of our people think it disreputable to labor. We have been accustomed to be waited upon from our infancy, and consequently, keep about us too many wasteful and almost idle domestics. Exempted from labor and even from the common cares of business by the employment of agents, we imbibe habits and modes of thinking unfavorable to physical improvement or successful agriculture. The unfinished houses and projects half executed, which are to be seen throughout the state, are evidences of the meaning and truth of this remark. That the ease in which we have so long indulged, favors the attainment of literary and political knowledge and personal accomplishments is manifest from the acknowledged proficiency of Virginians in *these respects*. But, whilst we are all politicians, to a man, it is to be regretted that our achievements in the arts and sciences bear no just proportion to the opportunities we have had. May not this arise from the ill judged devotion of too much time to pleasure and dissipation? It is unfashionable for a genteel or educated Virginian to apply himself to the details and cares of the humble, but useful vocations of life. And, hence, it is, that most of the sprightliness and genius of the state have been applied to one of the two learned professions. The pulpit is of late, putting in its claim to the aspirations of our youth.—Has not agriculture and the arts been too long robbed in this way, of their just share of talents—of men whose intellectual endowments might have given a more winning countenance to the venerated mother of us all? Of the legions of young men who annually embark in the professions, how many are there who rise to eminence? How many, that, from disappointment and chagrin, betake themselves to dissipation? How many linger out a brief life of listlessness and *expectation*: almost a burden to themselves and an expense to their parents and relations? How many, with consciousness of merit and a determination not to become drones, reluctantly emigrate from the scenes of their boyhood and the bones of their ancestors? May not I ask what portion of all these, if brought up to the habits and cares of business—to the quiet and healthful pursuits of rural life—or to the cultiva-

tion of the useful arts, would have been lost to the state, either by self destroying habits or emigration? The effects of slavery upon our daughters, though not less striking and pernicious, are less seriously felt by *agriculture*; but it does not seem to accord with the object of this paper, to dwell upon them.—If these effects be seen in the lofty pride of our women; in their admiration of *genius*, intellect and valor, and a *repugnance to domestic duties*; they are also to be seen in their virtues, and, especially, in their chastity. The profligate cannot fail to see and feel the meaning of this remark.

The white man who has to labor for his support, does it with an unwilling spirit. He sees the exemption enjoyed by others; and, if he does not fancy himself equally entitled to it, is too apt to repine at his lot, or migrate to some new state, where he will be upon a footing of greater equality with his neighbors.

But, independent of the enervating and paralyzing effects of slavery upon all of our *white population*, there are pecuniary losses, arising from it, that are heavy drawbacks to the agriculturists. Most of the labors of agriculture have been confided to careless overseers, and still more careless operators. The slave feels no inducement to execute his work with effect.—He has a peculiar art of slighting it, and seeming to be busy, when, in fact, he is doing little or nothing. Nor can he be made to take proper care of stock, tools, or any thing else. He will rarely take care of his clothes, or his own health, much less of his companions when sick and requiring his aid and kindness. There is, perhaps, not in nature a more heedless, thoughtless human being than a Virginia field negro. With no care upon his mind, with warm clothing and plenty of food, under a good master, he is far the happier man of the two. His maxim is, "Come day, go day, God send Sunday." His abhorrence of the poor white man is very great. He may, sometimes, feel a *reflected* respect for him, in consequence of the confidence and esteem of his master and others. But this trait is as remarkable in the white as in the black man. All despise poverty, and seem to worship wealth. To the losses which arise from the *dispositions* of our slavery must be added those which are occasioned by their *habits*. There seems to be almost an entire absence of moral principle among the mass of our colored population. But details upon this subject would be here misplaced. To steal and not be detected is a merit among them, as it was with certain people in ancient times, and is, at this day, with some unenlightened portions of mankind.—And the vice which they hold in the greatest abhorrence is that of telling upon one another. There are many exceptions, it is true; though this description embraces more than the majority. The numerous free negroes and worthless, dissipated whites, who have no visible means of support, and who are rarely seen at work, derive their chief subsistence from the thefts of the slaves.—These thefts amount to a great deal in the course of the year, and operate like leeches on the fair income of agriculture. They vary, however, in every county and neighborhood in the exact proportion as the markets for the plunder varies. In the vicinities of towns and villages, they are the most serious. Besides the actual loss of property occasioned by them, they involve the riding of our horses at night, the corruption of the habits and the injury of the health of the slaves; for whiskey is the price generally received for them. These evils have been always felt; but they have become so great of late, that the legislature ought to provide a more efficient remedy. The statute book would seem to contain one.—"Whether the defect be in the law or in its execution," is not for me to decide. It sometimes happens that the head thief on a farm is in partnership with the overseer; and when this is the case, the husbandman has no chance for profit.

Another great cause of the dilapidated appearance

of Virginia is the semi annual wave of emigration which has so long rolled from her bosom in a western and south-western direction. It has not only swept off the most enterprising portion of our people, but also much of the capital and moveable property of the state. Nor is this all: the price of land has been kept down by the great quantities of it brought into market by the emigrants. Instead of improving those we held before, we have been tempted to add to our possessions exhausted farms and plantations. It has been the custom to go in debt for two-thirds of such purchases. The emigrants, besides taking with them every thing they can, draw annually, for three years, upon the earnings of their old neighbors. Thus the landholders have not been able to accumulate a *disposable* cash fund, to be applied to improvements and the purchase of better implements, &c. On the contrary, they are too often forced to cultivate their lands with greater severity, to meet these payments.

The great fertility and cheapness of western lands, and the increased value given of late to every thing in the west, by the use of steam on its noble rivers, have been inducements to emigration too strong to be resisted by a people who find it laborious to earn a mere subsistence in the land of their fathers. I need not advert to the wonderful, the magic growth of the "mighty west"—that fairy land of imagined manna, and of milk and honey. During the ten years, from 1820 to 1830, the increase of population, and rate of increase, will be seen from the following table:

States.	Increase in ten years.	Rate of increase per cent. in ten years.	Present population.
Alabama	181,096	141.6	308,997
Mississippi	61,358	80.1	136,806
Tennessee	264,009	62.7	684,822
Kentucky	124,527	22.1	688,814
Ohio	356,203	61.2	937,679
Indiana	194,401	132.1	341,582
Illinois	102,364	185.4	157,575
Missouri	73,488	110.4	140,074
	1,357,449	Aver. 99.4	3,396,379

These rich and flourishing states have grown up within a short time. It is not pretended that all the emigrants by whom they have been peopled went from Virginia. But it must be conceded that this state furnished a very large proportion of them; to say nothing of the number of her sons who migrated to the Carolinas, Georgia, Florida, Louisiana, Texas, Arkansas and Michigan. The fact that so many of our friends and relations have left us and are prosperous and happy in the new states, has a tendency to make us restless and dissatisfied, and will continue to keep up, and perhaps increase the spirit of emigration.

I have given a rapid sketch of some of the great causes of the depressed condition of Virginia, and particularly of her agriculture. But there are many others,—some growing out of these, and others independent of them,—which I must leave to suggest themselves to the mind of the intelligent reader.

Now, what is to be done to arrest these evils—to give new hope and confidence to the desponding minds of our citizens, and retrieve the falling fortunes of the good old *mother state*? This question addresses itself to the heart of every individual patriot: it solemnly appeals to the hearts and the heads of our legislators, and all others in authority among us. The thing is practicable; and only requires a small sacrifice of pride, individual interest and local feeling. Let us abandon and discountenance that aristocratic feeling which we have inherited from our ancestors and have too long cherished. Let us attend more in person to our business, no matter what that may be, instead of trusting to agents or deputies—retrench expenditures, particularly of living—bring up fewer of our sons to the learned professions, and more of them to industry in agriculture and the useful trades and arts. In this way we may dispense with many

careless and costly overseers, with the number of artists, engineers, skillful mechanics, and even with the hosts of northern schoolmasters, who find annual employment alongside of our idle sons. Let us abandon the besetting sin of procrastination and making good resolutions that are never executed—adopt an improved system of cultivation—make all the manure we can, and reclaim a given number of acres of land every year, according to our means, if it be but one or two—use better implements of husbandry—prepare for it, and take better care of our crops and stock—reduce the latter to a number that can be well fed and kept in high order, and one-fourth will give more profit than the whole; and as much manure, without extensive and ruinous grazing of the fields. Ought we not, as soon as possible, get the best breeds of stock, and gradually adopt the *soiling* system; or, in other words, the plan of keeping our stock within limited bounds, and *feeding* them abundantly with food, cultivated and prepared for them, throughout the various seasons of the year? One milk cow properly housed and fed throughout the winter, will give to a family more milk than half a dozen in our common way. But experiments and their results upon this, and almost all the branches of rural economy, have been made known to the public, and may be referred to. The nature of this article prevents my going into specific details; since almost every subject would be the ample groundwork of a little volume.

But why should we not get up agricultural societies in different parts of the state, and *keep them up* by zealously encountering some little trouble and expense for that purpose? It is an old saying, that "what is every body's business is nobody's." This aphorism is *not true in politics*; and why is it that we cannot feel a kindred zeal in what is the foundation and life-spring of all other human vocations? In politics every man takes an interest: we are ready to attend public meetings—to discuss the topics of the day around our firesides—at cross roads, and all the sorts of shops and meeting places in every county. We cheerfully pay our money to support profligate and hired editors, who either gratify our taste for slander or minister to our bitter prejudices; and yet we are unwilling to pay a small sum for the support of an agricultural journal or an agricultural society! Our civil and political rights are very important; but there are "matters and things" which address themselves to our next dearest sublimity interests, and which we ought to attend to, because they involve so large a portion of our comfort, prosperity and happiness. The human race is struggling to get onward in almost every thing else but in the homely pursuit on which all others depend—*agriculture*. Yes, every thing depends upon it at last; for it supplies the substantial comforts of life. What a host of men have we in this half peopled world of *ours*, where there is so much land and such ample elbow-room, who literally live upon the industry of the husbandman? It is true that many of them are necessary auxiliaries. But how many of the various *craftsmen*, including the *buttern* and *shuttle*, and other *players*—whether in the forum, the sick room, the pulpit, the necessary departments of public service—in the various and ramified employments of commerce, or in the circles of benevolent societies, and other trades devoted to our *instruction* and *edification*—how many, I ask, among all these, are willing to walk upon *old mother earth*, during half the year, without double and treble *foot clothing*? Many of them afford us necessary comforts and conveniences, and even the pretty things upon which we may serve up in style the productions of the husbandman; and others live by their talent for offering up to Heaven fervent thanks for the privilege extended to all of *consuming* these savory viands. But, after all, do not the varied and indispensable vocations of human intellect and human industry mainly depend upon the *agricultural* community?—upon that portion of our population the

least respected and the least regarded by the law-makers and the patrons of other and less valuable pursuits?

Is not husbandry the great preponderating interest in America? Look at the happy varieties of our soil, climate and productions—look at the vast territory of unimproved and uncultivated land, inviting the hand of industry, and promising the *slow*, but *certain* rewards of peace, health, abundance. And, with all these things staring us in the face, is it not preposterous in the federal government to wish to hurry things beyond their natural gait—to turn us into a nation of *spinners* and *wavers*, and *handy-craftsmen*? The talents of the state have been too much devoted to something other than our *primary* interest; and that is the reason, as I have before suggested, that Virginia has sunk to what she is. Is not the time for her renovation at hand? Many of us have been unwilling to *run away*, either from the increasing gloom and dilapidation which annually thicken around us, or from the moral depreciation, including our own faults, in which we find ourselves annually involved. I say that *many* have been influenced by this consideration. We have expected a sense of returning justice on the part of the federal and state governments. We have looked to better times, and suffered present evils, under the confident expectation that justice would be done to us by the federal government, in relation to the tariff, &c.; and that our own drones in the state legislature would be either removed or awakened to a sense of their obligations to do something for the farmers and planters, instead of spending their time in abstractions about federal politics or catering for the interests of deputy sheriffs and clerks of courts. This remarks, so far as federal politics are concerned at *this time*, may not be strictly just; for I acknowledge that South Carolina has placed the union in jeopardy. But my essay has nothing to do with that.

If the farmers and planters of the United States choose to be made the pack horses on which all other interests may ride up the hill of prosperity—be it so, in the name of God! We have broad shoulders—brawny hands; and very little ambition, but to surpass the band-box, and handy-craft, and tongue-craft gentry in all the substantial of honest dealing and warm hearted, though blunt, hospitality. I am exclusively a farmer; yet, I have seen something beyond the scope of rural cares and country rusticity. And may I not ask, after all, who, in the whole circle of human employments, enjoys more substantial happiness, and feels a loftier independence than the virtuous warm-hearted *husbandman*? All that surrounds him is his, and depends upon him. Every thing that he consumes is the product of his own industry, except a few luxuries, which he readily procures in exchange for his surplus articles or for the price of them. His necessary exercise in the pure air invigorates both body and mind. Who eats his meals with more zest, or sleeps sounder? Who is less annoyed with ennui—with *dyspepsia*—with other *fashionable* diseases? Who enjoys the company of a friend or neighbor with more heart-felt pleasure—or is more willing to offer the hospitalities of his roof to the stranger?

But why should not the husbandman, with these pre-eminent claims, receive some share of justice from the government? Some little crumb of comfort—and if not even a *crumb*, why should he not be *exempted* from the maintenance of speculation, cupidity and avarice? We have no hope but in ourselves. Let us then determine upon a change. We cannot be worsted much. Why should we not instruct our bourgeois to make more ample provision for educating the people, and for carrying on a system of internal improvement commensurate with the wants and the rich resources of the state?—These subjects are intimately connected with the prosperity of agriculture. I will not insult the public understanding by supposing that any thing is necessary to be said in behalf of education. The only difficulty is, that the men of proper

ty are too unwilling to pay a small tax to enlighten the minds of the children of their poorer neighbors. They seem to have forgotten that the law of entails is abolished; and that in the revolutions of fortune their own children and grand-children may stand in need of a similar mite from the very persons whom they seem now so unwilling to aid. They also seem not to perceive that by some trifling contribution they may dispel some of the clouds of ignorance by which they are surrounded, and improve the morals and habits of their neighbors.

A judicious system of *internal improvement*, projected upon a liberal scale, and prosecuted with adequate means and becoming energy, cannot fail to put a new face upon the affairs of the whole state. In its prosecution it must increase the value of labor and give employment to the restless part of our population; giving, at the same time, fresh expectations and hopes to all desponding minds. If it does not at once arrest the destroying tide of emigration, it cannot fail to do it in a few years. Need I dwell upon the rich and varied resources of this great state?—resources which would be soon developed, if the means of transportation and intercommunication were only afforded? In consequence of the great expense of transportation to market, the productions of the interior are confined to such articles as will bear the expense. But if we had the necessary roads and canals, an immediate change would take place in the pursuits of the planters and farmers.—Their industry and economy would be stimulated, and cause the production of a variety of articles which would add new wealth to the state, new comforts to the producers, and materially change the blighted aspect of the country. There is nothing to be alarmed at in the expense of a well planned road or canal, although the amount may at first seem to be large; for the income will soon pay it off. In the mean time, the advantages to be derived from the increase in the value of property, the new articles that may be carried to market, and the saving in the expense of carriage, will all more than compensate for the cost of the work. But it is the misfortune of Virginia, that on this, as on many other subjects, her local interests are not homogeneous. We have a low-land, a south-side, a middle, a valley, a northwestern and southwestern interest. Some of these, either in the whole or in part, harmonise on improvements. But has not the time arrived when these jealousies and conflicting pretensions should give way to the common good? It is impossible to undertake at once, all the needed improvements in every section of the state. Ought they not to be executed, if the state is to participate as she ought, according to the scale of their value and importance? If local feeling and contrariety of views in the legislature disqualify that body from arranging the order in which such improvements ought to be made, what objection can there be, to the employment of commissioners and engineers from other states, to fix the scale of importance and order of time for their construction?

It is due to candor to acknowledge that no part of the state has received less public bounty, in the way of improvement, than the country below the head of tide water, whilst they have contributed their full share to the internal improvement fund. But, prospectively, they are deeply interested in the improvement of the whole state. Although they have level roads and navigable waters, there is scarcely a county in lower Virginia, in which some valuable improvement may not be made, fully equal to its share of general contribution. Justice would seem to require that these should not be overlooked. But, to return from this digression.

The defects of our police laws; the complication of our whole code, and, especially, the vexatious and expensive delays of litigation, bear upon all classes of productive industry, for the benefit of the non-producers and inefficient.

It was not my intention, in the commencement of

this paper, to dwell on the several crops cultivated in Virginia; or on the best modes of tilling each.—Such a range of inquiry is beyond my ability; and, if it were not, it would require a ponderous volume to embrace it. We must recollect that our state is divided into three great territorial divisions, in each of which the staples, the soil, and the climate, differ essentially. Below the head of tide water, corn, cotton, oats, peas, potatoes, &c. are the chief objects of culture.—Above the head of tide water and to the North mountain, tobacco and wheat; and, in the valley, may be added hemp, live stock, &c.—Beyond the North mountain, grazing, and fattening stock for market may be considered as the preponderating interest. Systems of tillage and management, quite different in many respects, apply to each portion of the state. The single subject of the management of *manure*, both in regard to the making and application of it, presents an illustration of my idea. In the lower country, we have an abundance of shell-marl, sea, swamp, creek and river mud; pine beads, kelp, and exhaustless quantities of vegetable matter on the swamps and marshes; we only want the industry to collect and use them. The newly discovered quantity and value of our marl resources seem to favor the hope, that from this source alone, a marked change will soon take place in the appearance of this, most tattered, and desolate-looking portion of Virginia. Albemarle is the native county of the writer; yet, he is not blind to the beauties, the advantages and value of lower Virginia.—Its great misfortune has been, the facility with which a subsistence could be procured without much labor. The palatable productions of the air, the land, and the water, have too much enervated, may I not say, paralysed, the energies of the people. At one time, the monopoly of property and the proud aristocratic feeling of the Dons, kept every thing subservient to them; and, to them, and their pride, and anti-republicanism, lower Virginia is more indebted for her drooping appearance, both in the general aspect of the country, and the *general mind*, than to any thing else! The effects of *emigration* would not have been so serious in lower Virginia, but for the pride of "*untitled nobility*."—Thank God, that there is now some hope for a change! The revolutions of fortune have left but few of the *old gentry* who are not, more or less, disposed to mingle without conscious disgrace, among the *common people*: and, always, when they want office or public favor: and those who do remain, of that caste, whilst they may justly feel the pride of *pedigree*, must feel also a conviction, that their ancestors have a little over-stepped the mark, on this subject. But, things are getting right; and, it is unseemly to talk too much about a *departing shade*! We ought to let it pass, because we have more recent, and now, more formidable pretensions to combat.

The other parts of the state are less amply supplied by nature with materials that may be employed in fertilizing the soil. From the operation of this remark, ought to be exempted all that region of country in which *limestone* is found in abundance. This exemption would embrace a large, and perhaps, the most desirable portion of country, beyond the Blue Ridge. In that section of the state the abundance of limestone and calcareous earth or marl, leave those who reside among these advantages, no excuse for not enriching their land. A narrow vein of limestone commences at the Potomac on the east of the Ridge, and runs parallel to the mountain at about an average distance of twenty-five miles from it, quite to the North Carolina line. This vein is, in many places, a considerable depth below the surface. But where it does appear is of good quality and might be usefully employed in fertilizing the adjacent lands. In the line of this vein, the writer has seen immense quantities of blue clay marl, resembling limestone in the water courses, and where the topsoil has been washed off on hill-sides. This substance is of the consistency of Fuller's earth; but effervesces powerfully in

acids. When applied as a manure he has seen the most surprising results. And, yet it is not strange, that neither this substance nor the limestone, is any where used to much extent? The marl of the lower country is becoming an article of commerce. It is most abundant on the navigable rivers and bays, and vessels have been some time employed in transporting it to the cities north of us, where it sells from 10 to 12½ cents per bushel.

We have too long trod in the old and beaten track of our ancestors. Has not the time arrived when the agricultural community ought to rouse from this lethargy—avail themselves of the wonderful improvements of the age—at any rate show a disposition to avail themselves of all new discoveries, and to better their condition? Why should we permit every thing else to get so far the start of us? Our neighbors to the north, and even to the west deride and shame us, by their superior skill and industry, and the consequent superior advantages and comforts they enjoy! Then, let us "be up and doing." We have the climate, the soil, and other superior advantages that a kind Providence has bestowed upon us. We have every thing necessary for the exhibition of enviable scenes of rural beauty, prosperity and happiness—yes, every thing but the *industry*—and a *disposition* to do so. How long will we submit to such a just reproach!!

HORTICULTURE.

(For the American Farmer.)

TRANSPANTING POPPIES AND LUPINS.

In *Thorburn's* "Directions for the Management of Flower Seeds," it is said, that "any thing may be transplanted that we know of, except the *poppy* and the *lupin*, and these we believe to be impossible. They must, therefore, be sown where they are to blow." And the same opinion in regard to lupins was held by the celebrated *Pursh*.

This notion is so different from the results of my experience, that I would inquire what poppies, and what lupins are meant? of the transplantation of annual poppies, I know nothing; but I have been uniformly successful in transplanting both the *oriental poppy* and the *Caucasian poppy*: I have no recollection of having ever lost a plant. I cannot say as much, however, in regard to lupins. I think I have lost one or two out of more than a dozen *Lupinus perennis*, which were brought from the woods into the garden; but considering the great change in their situation, I conclude that they bear removal as well as the average of wild plants. This spring I have also transplanted several other species of lupin with the most perfect success, after the plants had three or four leaves besides the cotyledons. These were *Lupinus nootkatensis*, *L. macranthus*, and *L. luteus*. The last was a remarkable case, and will show how well this plant can bear the operation. It was out in four leaves, when I observed it in a withering state; and suspecting some mischief at the root, I took it up, and cut off the diseased part, removing the lupin into another border. It was shaded by a flower pot with a hole in the bottom; but the plant continuing to decline, I turned off the pot, relinquishing all hopes of its recovery. After a few days, however, to my surprise, I found it putting forth new leaves, and it is at this time in a flourishing condition. A GARDENER.

WILLIS' GREAT GRAPEVINE.

MR. SMITH: Port of Oxford, June 16, 1833.

Dear Sir,—As to my great grapevine, as it is called, I must inform you that the first of the sort came from the island of Jersey, between England and France; but many people have contended and called it an American sort. I cultivated the sort many years with success, before I planted this in my yard, and when I put this there, I applied my new discovery of

the soap suds. &c. &c. twice a week on its roots, and the first year's growth and a little more was eat to the earth by a cow that got in one night; I then trained the first sprout that it put forth to forty-five degrees elevation, with crooks in the stem. At three or four years' growth, I was taking down some valuable fruit trees; I then pruned off about two-thirds of the vine, and trained the other to cover the yard before the door for a shade; and I still order the suds to be applied at least twice a week. Its growth took the attention of so many strangers that some thought there was more than one stem to it, and it was examined by some, thinking it was several vines put together. My respectable friend, Mr. Hammond, the President of the Easton Bank, came and viewed it, he had lived in Jersey, and said it was much like the sort in Jersey, that run over the houses, and the fruit gathered out of the windows, but when he tasted it he said it was not the same taste; but if it was ripe it would be as good, and much like it. I find it is best to hang on late, even until winter, and it is a fine table fruit. It is now in its eighth year's growth, and is more than one hundred and twenty yards, if opened out a little, in circumference; the stem only twelve and a half inches round. What would it be if taken care of, and allowed to run until old, as the Hampton Court palace vine, in England, planted in the reign of King William? A vine to grow fast and live long should be taken far from the root of the mother vine, or raised from seed. I am, dear sir, yours, with due respect,

JOHN WILLIS.

(From the Southern Agriculturist.)

OBSERVATIONS ON THE PLANTING OF THE VINE AND ROT IN GRAPES.

Columbia, S. C. May 28, 1833.

Dear Sir.—I have observed in the number of the *Southern Agriculturist* for the month of March last, a communication from that very interesting and persevering cultivator, Mr. Abraham Geiger, on the subject of the culture of the vine, and particularly on the manner of planting it to the best advantage and least expense; and also on the cause of the rot in grapes, &c. Any thing proceeding from so intelligent a source is highly deserving of full consideration, and my personal regard for this gentleman, ought not, and cannot prevent my defence of modes of planting and culture which I have hitherto defended, because, I could but presume that practices, recommended by almost all writers on the subject, must have been thus advocated from a consciousness of honest motives, based on the experience of ages; but surely not with a view of causing "the culture of the vine to be looked upon as something mysterious"—and thereby "contrived and intended to be made difficult and laborious." It is very natural for a man who has acquired experience by the practice of a particular art for many years, to imagine that there is no difficulty or mystery attending it. He is also apt to forget that it has probably cost him the labor and observation of years to come to this conclusion. Let any man of any common share of understanding undertake the practice of any art, which he has only heard or read of, and, simple though it may be, it will require a number of trials before he can reach the desired object, and find out that there is no mystery or difficulty in the practice.

That there is no more difficulty in the culture of the vine than in that of any other plant, appears evident enough from the scale of intelligence of the common vine-cultivators all over the world where it is cultivated for wine. It cannot be denied, however, that each plant has its peculiar habits, and that it grows, thrives, and is as fruitful as its nature admits, only in soils and situations particularly suited to it. The planting of trees of any sort is certainly a very plain and simple operation, depending only on the plain sense and observation of nature in her mode of proceeding; and yet there are, comparatively, but few

that perform it in the most suitable manner. The planting of the vine in deep trenches is, I believe, a general practice in Europe; though, probably not equally deep every where; and this, it is fair to suppose, is the result of experience. The first person who recommended it clearly, distinctly, and forcibly in the *Southern Agriculturist*, is George J. P. Clark, Esq. of St. Augustine. The evident intelligence and sagacity of that gentleman induce me to examine more fully and critically this subject than I had hitherto done, and the result was a confirmation of my previous views of the subject, according with those of Mr. Clark's and the experience of ages.

The transplanting of trees much deeper than they originally grew, certainly "is a departure from the order of nature;" for, "How often do we see them in their native state, put forth their roots to the surface." &c. As Mr. Geiger further very well observes: "to assist nature and not to depart from, is in my view the correct course." This is and has always been the object of the most eminent cultivators, and they have only differed as to the accuracy and depth of their alterations on nature's various processes, by which the clearest-sighted have usually been the most successful. A judicious follower of nature in her operations, avails himself of her willingness to be apparently contradicted, when the opposition is really more in appearance than in reality. He coaxes her and prevails on her to yield somewhat to his convenience, and she is usually found very accommodating in such cases.

Were the vine in a state of culture similarly situated as those in a state of nature, and were the products of cultivation expected to be not greater, or superior in quality to those in the woods, the case would be very different from what we find it. We must, therefore, look into the difference of situations and the objects in view, adapt ourselves to the existing case, follow nature in such a manner as to compensate for conditions which are unsuitable to our aims, and unattainable in our circumstances. Vines in a state of nature, in the woods, grow in shady ground, which is ever covered with the decayed and decaying leaves of the surrounding trees and bushes, and the remains of all other plants that grow in their vicinity, the collection of many years. This covering retains, at all seasons of the year, a degree of moisture at least equivalent to that which would be produced by some inches of light soil kept clear of grass and weeds, and thus perfectly open to the influence of the wind and sun. The principal roots of the vines in their native state, go as deep in the earth as the nature of the soil will permit, and the upper ones run superficially immediately under the loose bed of vegetable matter that covers the ground. If you clear the ground, cut away all the trees, bushes, and all the other vegetables but the vines, and keep it clear of grass and weeds, the effect will be that the superficial roots of the vines (except the large ones which afterwards sink deep in the ground) will perish, or, if not, will not furnish the vine with its accustomed quantity of moisture for its nourishment with its usual regularity. In wet weather they will furnish a superabundance, and in a long drought none or scarcely any. The consequence of this must necessarily be that, if the plant does not perish, it suffers and languishes till it has accommodated itself to its new circumstances. Many experiments have proved to me that this is the result. The vine (some few delicate kinds excepted) is a very hardy and vivacious plant, and it readily soits itself to any situation that does not too violently oppose its habits. Make a trench three or four feet deep, less if you come to a stiff clay, cover the bottom of it with soil, from the surface mixed with a well rotted vegetable compost, and in this plant good, well grown vines from two to six years old with their roots as entire as practicable; fill the trench only to about eight to twelve inches, and they will certainly grow well and scarcely feel the effect of their having been transplanted. The greater abundance of water that will thereby be thrown

to the roots will greatly promote the growth. Let the trench be gradually filled up, in the course of about three years, with light sandy soil, and they will be gradually accustomed to this depth, and suffer no rot to remain within this depth from the surface; but cut them away every winter at the time of pruning. The consequence will be that the vine will depend on its roots, which are deep in the soil, and where the supply of moisture is most regular, never very scanty; for a severe drought is seldom or never found to reach the depth of these roots, and never too abundant; for, water in the longest spell of wet weather, reaches to this depth but slowly and gradually. It may be said that there is some trouble attending this mode of planting; but it must be recollected that when it is done, it is for several hundred years, and that a good thing that lasts so long is not too dearly bought by a little extra trouble. The vine is very seldom, if ever, seen to suffer from drought. Its deep roots pump the moisture from far below the surface, and its abundant leaves imbibe it from the vapors of the atmosphere, which they probably condense by their coolness; so much so, that in the driest weather, when every plant in its vicinity is destitute of dew in the morning, a drop of it may be seen at every point of the vine leaves.

Let us now contrast the effect produced by the shallow planting and the retaining of the surface roots. The lower roots in this case will still tend to go deep according to the nature of the soil, and, as long as the moist season lasts, the vine will grow with very great vigor. The upper roots will furnish the plant with a great abundance of food; but when the drought comes severely, the vines will have to depend almost solely on its lower roots which are not themselves deep enough to be within the reach of a regular supply of moisture; but are affected more or less directly by the weather; whereas the upper roots that run horizontally near the surface, and which in wet weather used to furnish the vine too great a supply, are now left in an almost perfectly dry bed of earth, and exposed to the scorching sun. The quantity of roots being thus divided between an upper and a lower tier, the latter must, of course, be much smaller, and inefficient than must be the case when the upper tier is suppressed, and the strength of the whole, yielded to the lower. Any one must judge *a priori*, that such a state of things must be opposed to the welfare of the plant, and most particularly to that of its fruit. It must be here observed, that very great vigor of growth in the vine, and indeed all fruit bearing-trees, is unfavorable to the abundance, perfection, and richness of the fruit. And this brings me to notice the principal cause of the rot in grapes.

The grape, like all other fruit, is beset with myriads of enemies who prey on it; and Mr. Geiger is certainly right in accusing insects of causing great havoc in vineyards, whether by their eating, or still worse, by depositing their eggs either within or on the surface of the fruit, by which a kind of rot is induced. It is not merely one kind, but numerous kinds of insects that commit these injuries. But numerous as are these enemies, there is one much more formidable that causes a destructive rot that is even beyond the capability of the insect; though they be in countless myriads; and this dread enemy is nothing else than water, when it is too abundant. The injury done by insects is partial; but that caused by the other is, under certain circumstances, the almost total destruction of the fruit. In the first place, when much rain falls during the time when the vine is in bloom, it occasions what is called in French, "*coulure*," that is, the flower is blighted by the pollen of the stamens being washed away which prevents the impregnation of the fruit. It is very difficult to find an effectual remedy for this, practicable on a large scale. The temporary covering of the vine will do much, and the ringing of a branch of it will sometimes have the desired effect by hastening the blossoming of the branch thus operated on. The rot always takes place

when, after a long drought, a great glut of rain happens; and this is very frequently the case from the nature of our seasons. We have generally a long and severe drought in the beginning of summer, and this is most usually followed by very abundant rains. The vine, which has been allowed to retain its superficial roots, and has not, therefore, attained as much depth with its other roots as it would otherwise have done, has been, during the drought, but scantily supplied with moisture by its roots, the upper ones being roasted by the sun and drying wind, and the lower ones not only are not deep enough, but they are also too feeble and inadequate to a full supply; and if the plant has not suffered much during that time, its luxuriance has been checked. The upper roots are very dry and thirsty, and when the rainy season comes, they furnish the vine with such an abundance of water, that the fruit is filled with too crude a juice and it rots. That this is the case is evident from the rot always appearing extensively, invariably under such circumstances, and that vines so situated as not to be exposed to take in too much water, seldom or never rot. The vines planted in paved yards in towns, where the rains that descend so plentifully run off and do not sink in the earth, but in a comparatively slight degree, are seldom, if ever, affected by the rot. Such as are growing in small gardens in towns, where they are surrounded by houses and streets, by which most of the rain that falls runs off, are in proportion to these circumstances exempt from the rot. Vines planted deep, and whose surface roots are yearly suppressed, do not suffer so much from the drought; for they are supplied from a depth unaffected by the drought, and in the rainy season, the water from the clouds reached their roots slowly and gradually, and the bad effects produced in other circumstances are not as much weakened. The observation of another fact tends greatly to corroborate this view of the case. When vines that are of a bearing age are transplanted, they usually bear some fruit the first year, if they have been planted with any care at all. The grapes produced under these circumstances are seldom, if ever, affected by the rot. The cause is evidently this, that though the vines are dug and planted ever so carefully, they have nevertheless lost much of the roots, particularly the small ones which are as the mouths of the plant by which the moisture is chiefly supplied to it. I say chiefly, because the leaves also furnish a considerable supply. Now the leaves also of a vine thus circumstanced are greatly less numerous than usually. The supply of moisture in these cases is very considerably diminished, and the fruit is, therefore, not affected by the rot.

It appears to me, sir, that the above reasons are sufficient to defend the practice of deep planting, and that if, in this, I err, I do so in company with the best authorities on the subject, and not without having, at least, some plausible reasons to advance in my defence. That men differ in opinions and even as to matters of fact, is, I conceive, an advantage; for discussions lead to truth, and the attainment of this is certainly my sole object. It may be thought by many that this subject is uninteresting; but to such as may think so, I will ask if Mr. Geiger's last crop of six thousand five hundred gallons of wine, the product of very poor, and in other objects, unproductive lands, does not show it to be a matter of the utmost importance in every point of view, moral, political, economical and pecuniary.

If you think, Mr. Editor, that the above is worthy of a place in your valuable periodical, I beg you will insert it as early as convenient; for I have delayed it too long, and, I assure you, my zeal for this object has rather increased with my years, and I still think that the culture of the vine in these southern states will prove a blessing to them, and that the sooner such an object is attained the better.

I am, very respectfully, sir,

Your obedient servant,

N. HILBEMONT.

(From the National Intelligencer.)

LARGE HOLLY TREE.

Messrs. Editors:

June 23, 1833.

Taking a walk with some friends a few days since in Stafford county, Virginia, we came across a large and elegant green tree, which we were told was a holly. It seemed almost incredible, from its size, as the holly, though a native of America, rarely attains to more than a foot diameter through the trunk. Upon approaching, we found it to be the true American holly, or *Ilex Opaca*, which, measured at two feet from the surface of the ground, was seven feet six inches in circumference, or more than two feet in diameter.

This tree is situated immediately on the new mail road from Potomac Creek to Fredericksburg, and but a few yards from the present road, about a half a mile from the landing, and is well worthy of notice, as I have never heard of a holly growing to such a size in this country. Yours, respectfully, H.

(From the Alleghanian.)

TO PREVENT BUGS FROM DESTROYING VINES, &c. MR. EDITOR:

In your remarks of the 19th ult. I noticed recommended as a preventative of bugs, &c. destroying vines, plants, &c. spirits of turpentine and water sprinkled on the ground around them. But experience has taught me a plan, which I esteem more cheap and effectual; as those insects injure vines chiefly at night, and early in the morning, for as soon as the sun rises (if the weather is clear) they betake themselves to adjacent shades, where they remain until night again returns, when they also return to their work of destruction. To destroy these insects, kindle a number of small fires in the lot, contiguous to the vines at night, and they will fly immediately into them; rich split pine is preferable to any other material. The above plan was discovered by having occasion to go into a garden at night with a lighted candle, when some of them were seen to fly into the blaze; this led to the above experiment which proved effectual on the first trial. The darker and warmer the night, the better. But if others collect, as is frequently the case in a few days, repeat the fires as above, and you will certainly preserve your vines.—The season having now arrived, when attention will be paid to that species of horticulture, I have thought proper to give this receipt, which you have liberty to publish, if you choose. A FARMER.

RURAL ECONOMY.

(From the Repertory of Patent Inventions.)

METHOD OF OBTAINING CREAM FROM MILK.

A process of divesting the milk of its component portion of cream, to an extent hitherto unattainable, has been effected by Mr. George Carter, of Nottingham Lodge, and is thus detailed by that gentleman, in a paper presented to the Society of Arts:—A peculiar process of extracting cream from milk, by which a superior richness is produced in the cream, has long been known and practised in Devonshire; this produce of the dairies of that county being well known to every one by the name of "clotted," or "clouted cream." As there is no peculiarity in the milk from which this fluid is extracted, it has been frequently a matter of surprise, that the process has not been adopted in other parts of the kingdom. A four sided vessel is formed of zinc plates, twelve inches long, eight inches wide, and six inches deep, with a false bottom, at one-half the depth. The only communication with the lower compartment is by the lip, through which it may be filled or emptied. Having first placed at the bottom of the upper compartment, a plate of perforated zinc, the area of which is equal to that of the false bottom, a gallon (or any given quan-

tity) of milk is poured (immediately when drawn from the cow) into it, and must remain there, at rest, for twelve hours; an equal quantity of boiling water must then be poured into the lower compartment, through the lip; it is then permitted to stand twelve hours more, (i. e. twenty-four hours altogether,) when the cream will be found perfect, and of such consistence, that the whole may be lifted off by the finger and thumb. It is, however, more effectually removed, by gently raising the plate of perforated zinc, from the bottom, by the ringed handles, by which means, the whole of the cream is lifted off in a sheet, without re-mixing any of it with the milk below. With this apparatus, I have instituted a series of experiments; and as a mean of twelve successive ones, I obtained the following results—four gallons of milk, treated as above, produced, in twenty-four hours, four and a half pints of clotted cream, which, after churning only fifteen minutes, gave forty ounces of butter—four gallons of milk, treated in the common mode, in earthenware pans, and standing forty-eight hours, produced four pints of cream, which, after churning ninety minutes, gave thirty-six ounces of butter. The increase in the quantity of cream, therefore, is twelve and a half per cent. and of butter upwards of eleven per cent. The experimental farmer will instantly perceive the advantages accruing from its adoption, and probably his attention to the subject may produce greater results. I shall feel richly rewarded, if, by exciting an interest on the subject, I can produce any the slightest improvement in the quality or mode of producing an article, which may properly be deemed one of the necessities of life.

(From the Family Lyceum.)

PLEASANT AND USEFUL.

Some people are in the habit of thinking that nothing can be pleasant, that is of use. This is a very mistaken idea, for to a rightly cultivated mind, the pleasure arising from any object, would bear some proportion to the usefulness of that object. In fine, we should strive to make every thing we engage in, however trivial, whether for relaxation, or for the diversion of disagreeable feeling, as beneficial to ourselves as possible. This principle should be acted upon in all our arrangements. If, for instance, trees are to be planted by the road-side, to give beauty to the prospect, and shade to the traveller, those trees might be of great use if they were properly chosen. In some places in Europe, thousands of poor people are supported by the culture of silk, the worms being fed from public trees. Now if our roads were shaded by mulberry trees, the traveller would receive all the benefits that could be derived from trees of any sort, and the condition of hundreds of poor people would be rendered comfortable. By a little attention to this principle, of rendering every thing as useful as possible, our happiness here would be greatly increased. A gentleman, who died at Amsterdam some years since, struck with the correctness of this principle, bequeathed two thousand florins to a benevolent society, on condition, that two fruit trees of full growth, should be planted over his grave, the fruit to be publicly sold by auction every year, in order to prove, that even the receptacles of the dead may be rendered beneficial to the living.

EXTRAORDINARY FECUNDITY.—An ewe, of the Down and Leicester breed, belonging to Mr. Walker, of Islip, in this county, brought forth two fine lambs, and on the Friday morning following, the shepherd was surprised at finding two more lambs by the side of the same mother, all four likely to do well.—*Oxford (Eng.) Herald.*

An ewe, the property of Mr. Milliner, near Newport, Monmouthshire, yeaved four lambs, all of which are doing well.—*Sherborne (Eng.) Journal.*

Prices Current in New York, July 6.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .13 a .15 $\frac{1}{2}$; Upland, .12 a .14 $\frac{1}{2}$; Alabama, .12 a .15. Cotton Bagging, Hemp, yd. .13 a .21 $\frac{1}{2}$; Flax, .11 a .15. Flax, American, 8 $\frac{1}{4}$ a 9. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.50 a 5.75; Balt. How'd st. 6.12 a 6.25; Rh'd city mills, — a —; country, 5.87 a 6.00; Alexandria, 5.75 a 6.00; Fredericksburg, 5.75 a —; Petersburg, 5.75 a 5.87 $\frac{1}{2}$; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a 3.97, per hhd. 16.50 a 17. Grain, Wheat, North, 1.16 a 1.18; Vir. — a —; Rye, North, .73 a .75; Corn, Yel. North, .67 a .69; Barley, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6.00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25; prime, 10.75 a 11.25; Lard, .7 $\frac{1}{2}$ a .9.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep.

The stock now on hand for sale, is the following:

Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address. I. I. HITCHCOCK, American Farmer Establishment.

DEVON CATTLE.

For sale by the Subscriber, one Devon Bull, ten months old; a handsome and promising calf. Price \$100. Also, a very beautiful and valuable Devon Heifer, two years old. Price \$175.

I. I. HITCHCOCK,
American Farmer Establishment.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, nineteen months old, by Gloster, out of a first rate full bred cow. He is not above middling size, but is a very beautiful and perfect animal. Price \$250.

One full blood bull, two years old—a very fine animal. Price \$250.

One full bred Heifer, two years old, now springing, but the calf will not be valuable, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form; calves from two to six weeks old. They will be sold for \$50 each.

I. I. HITCHCOCK,
Amer. Far. Establishment.

TURNIP AND MILLET SEEDS.

J. S. EASTMAN has in store prime fresh large White, Flat, and Red Top Turnip Seed, and fresh Millet Seed. Also seed Buckwheat, together with a general assortment of Garden Seeds and Harvest Tools, and Agricultural Implements generally. Also Fox & Borland's Patent Threshing Machines, with spring conveyers. July 12.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by I. I. HITCHCOCK, American Farmer Establishment.

LINNEAN BOTANIC GARDEN AND NURSERIES, Flushing, near New York.

WILLIAM PRINCE & SONS announce to all the proprietors of Nurseries, and to those who propose to establish new Nurseries, that they will furnish articles desired at a liberal discount, and at a credit that will afford ample time for profitable reimbursement. We wish also to make known to all vendors of Seeds, or to those who desire to undertake such business, that we will furnish every variety of Vegetable, Field and Flower Seeds in quantities, at very low rates and a liberal credit. The Seeds possess the advantage of being raised under our own observation, or, when imported, of being tested to our satisfaction.

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Every person already engaged, or who desires to engage in the sale of the above articles, will, on application, receive all the information, requisite to the object in view, and such an establishment ought to exist in every town in the union.

The New Catalogues, with reduced prices and extensive additions to every department will be forwarded to all applicants, and the present period is particularly eligible for forming arrangements in anticipation of the fall business.

N. B. It is desired that the applications be made direct per mail.

TURNIP SEED, BUCKWHEAT, &c.

400 lbs. White Flat and Red Top Turnip Seed.

100 lbs. Ruta Baga or Swedish do do

The above is of the present years' growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Locust Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given. July 13.

SINCLAIR & MOORE.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Scythes, Grain Cradles, Scythes by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox & Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET—Very little variation in prices has occurred. The new wheat that has reached the market met a ready sale at an improved price, which we quote. The price of Howard street flour, from wagons, fluctuates, and is altogether regulated by circumstances. The general price paid, however, is \$5.62 $\frac{1}{2}$.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 452 hds. Md.: 174 hds. Ohio; 8 hds. Ken. and 2 hds. Vir.—total 636 hds.

FLOUR—best white wheat family \$6.75 a 7.25; super; Howard-street, 5.81 $\frac{1}{2}$ a 5.87 $\frac{1}{2}$; city mills, 5.75 a — city mills extra 5.87 $\frac{1}{2}$ a —; CORN MEAL bbl 3 62 $\frac{1}{2}$; GRAIN, new red wheat, 1.15 a 1.22; white do 1.22 $\frac{1}{2}$ a 1.25; —CORN, white, 60 a 62, yellow, 62 a 63; —RYE, 65 a 67 —OATS, 36 a 38.—BEANS, 75 a 80—PEAS, 65 a 70—CLOVER-SEED 3.00 a —TIMOTHY, — a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.00 a 2.50—Herds, — a —Lucerne — a 37 $\frac{1}{2}$ lb.—BARLEY,—FLAXSEED 1.37 a 1.50—COTTON, Va. 11 $\frac{1}{2}$ a 13—Lou. 14 a 14 $\frac{1}{2}$ —Alab. 11 $\frac{1}{2}$ a 13—Tenn. 11a. 12 $\frac{1}{2}$ a 13—Upland 13a 14—WHEAT, hds. 1st q. 28 a; —in bbls. 30 a 32—Wool, Washed, Prime or Saxony Fleeced 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleeced, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russia, ton, \$180 a 190; Country, dew-rotted, 6 a 7e. lb. water-rotted, 7 a 8e.—Feathers, 37 a 37 $\frac{1}{2}$ —Plaster Paris, per ton, 4.25 a; — ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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The American Farmer,

Edited by GIDEON B. SMITH, is issued every Friday.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

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THE FARMER.

BALTIMORE, FRIDAY, JULY 19, 1833.

ROBBERING GARDENS, ORCHARDS, &c.—The practice indulged in by boys, and encouraged too often by parents, of entering gardens and orchards and robbing them of fruit, flowers, &c. has become a most serious evil in the vicinity of Baltimore, and we wish particularly to call the attention of parents and guardians to it. We have occupied a considerable garden with fruit trees in it, for many years, and can assure the reader, that while the evil alluded to continues, we consider the existence of that trees in our garden, as a misfortune. On the Sabbath, particularly, it is necessary to keep a continual watch, from the time the fruit is formed, till it is gathered, or the boys will be sure to carry it all off. This is the case also at night, and more or less every day in the week. What little fruit is at last secured, therefore, costs more than it is worth. The loss of the fruit is not all. The breaking of fences, and trampling the garden, or crop in the field, necessarily incident to it, are fully as detrimental as the robbing of the fruit. Many foreigners, also, commit these depredations, supposing, as they say, that, *this being a free country*, all fruit is free to them. We were actually told by a foreigner some time since, whom we caught carrying off about a peck of our best fruit, that he thought in this country all fruit was common property. Now, so long as this thieving disposition of the boys, (of I and young, large and small,) and this mistaken notion of foreigners, continue, it will be impossible for gardeners in the vicinity to supply us with fruit. How strange it appears, upon reflection, that boys can conscientiously *steal fruit!* They would be horror-struck at the idea of being supposed capable of stealing a "fippenny bit," and yet never consider that the fruit they are taking is just as much property as the money, and indeed, more so, because it is the property itself, while money is the mere representative of it, and is freely given away for the merest trifles. Fruit is as much the property of the owner as is his horse, or his cow, as much so as is the furniture made by the cabinet maker, or any other article made by a mechanic. It is, therefore, just as criminal to steal fruit as it would be to steal a hat or a watch, or even the money from the drawer of the storeroom par. But with people of common sense it will be needless to argue this point—they cannot be mistaken on a question so clear; if they have doubts let them become the possessors of fruit trees, and their doubts will vanish. In the northern states laws have been passed particularly for the suppression of this evil, and there it is very fast declining. We think our laws in this respect, should be modified to meet the contingency; but we would prefer seeing it accomplished by public opinion, and for this purpose we have penned the present article. To remove all doubts as to the law in the case, it has been determined by a few fruiters, to prosecute the boys and their parents and guardians, and also the foreigners, both in the criminal court for stealing, and in the civil court for trespass, until the evil in their case shall be removed; and it is desirable, that parents, guardians, masters of apprentices, and all others concerned, be put upon their guard, for they may be assured, that the full extent of the law will be enforced without respect to persons.

We have thought it advisable to call the attention of the citizens of Baltimore to the subject in this way, that they might take measures to save themselves and families from the consequences. It is particularly desired that all the city papers will copy this article with the same view.

It is estimated that the farmers of the upper counties of Virginia, have lost 300,000 bushels of grain by the late freshets.

No. 19.—Vol. 15.

(From the Family Lyceum.)

BREAD MAKING.

The business of making bread is not enough attended to in our country. The yeast is too often not perfectly sweet, and when it has become sour, alkaline substances, as saleratus, or pearlash, or soda, do not restore it to its original fitness for the process of fermenting the dough. Another defect is, that the dough when put into the oven, is frequently not enough, or too much fermented, the consequence of which is, that the bread is rather clammy or sour. Another, and almost universal defect is, that the bread is not baked enough. The thickness of the loaf may be too great for the heat of the oven; or the heat may be so great as burn or crisp the outside of the loaf before the inner parts are done.

The whole vegetable kingdom is composed of three simple elementary substances, viz: oxygen, hydrogen, and carbon. Of these three starch is composed. And starch constitutes a large part of most grains, and many roots, into some of the grains, especially wheat, and in less quantities of rye, another substance, entirely unlike starch, enters. This is called gluten, which is also composed of oxygen, hydrogen, and carbon.

The starch and gluten composing wheat can be easily separated, either in grain or flour. The starch is soluble in water, and the gluten is not; consequently, if kernels of wheat be retained in the mouth for a short time, the starch will be dissolved and removed, leaving behind the gluten. Or if a gill of wheat flour be put into a cup, and exposed to repeated washings, pouring off the water after it is applied, it will gradually dissolve, and carry off the starch from the flour, leaving the gluten by itself. The gluten is unlike starch in being insoluble in water, but it is tenacious and elastic resembling India rubber.

To the gluten we are entirely indebted for light bread. The flour of India corn, rice, potatoes, and many other vegetables, though they may be used for bread, can never be raised so as to make light bread. In the process of fermentation in bread, carbonic acid is formed, which is retained only by the gluten, the starch permitting it to escape as fast as made.

The art of making bread, especially light bread, then depends upon diffusing the yeast through it equally; in other words, thorough kneading it. When that is done the carbonic acid is generated in nearly equal quantities through the whole mass, the gluten retaining it so as to render the bread uniformly light.

When the yeast is diffused unequally through the mass, some portions of the dough are raised before others, leaving parts of it unraised, or heavy, while other parts are carried so far as to become sour.

(From the National Gazette.)

TO MAKE THE POSOLE AND SACCA OF MEXICO.

Consulate U. S. A. Campeche, 18th May, 1833.

WM. P. DEWEES, M. D., Philadelphia:

Dear Sir,—You have long known, from Humboldt, that maize is the principal food of the native people and domestic animals of Mexico, and that its alimentary preparations are as numerous and various as those of rice in China and the East Indies; but you may not yet have reflected that some of the forms in which it is used in this nominal republic are worthy of general adoption in the United States, from the combined considerations of health, pleasure and economy.

I therefore recommend through you to our professional brethren and fellow citizens, both medically and morally, the two fluid preparations of maize called Posole and Saccá. Both are milky fluids obtained from dry corn, well boiled, reduced to a fine dough by a stone roller, diffused in water, and strained through a fine sieve. The corn to make Posole is boiled with lime, and at least twice as long as the corn in pure water, from which is made the Saccá. The boiled corn for the Saccá is fit for the roller when its integuments are so softened that in some grains they split

open. The corn for the Posole must be boiled until its integuments are nearly consumed and the eyes separated by the lime. The soft grains of both are converted into dough on a slightly concave surface of a stone having a gradual descent to the table, by means of another stone, long, rounded and tapering, analogous to the rolling pin of our bakers. This laborious process of the females I do not of course mention for imitation, and as little their easy method of mixing the dough and water with their unaided hands. But be the preparatory steps what they may, when once the fine mucinous particles of this boiled and bruised corn are passed through the strainer in the shape of a white fluid—they become as agreeable to the taste as almonds under the form of Orgeat or Almondmilk; and when sweetened with sugar or honey the Saccá may be mistaken for milk drawn from the cow. As in tea, coffee, and chocolate, so in Posole and Saccá, some skill is requisite in the maker; and I therefore advise you not to form a decided opinion of their merits on a few trials. When medically presented, the physician will, of course, select the limed Posole, or the pure Saccá, according to the state of his patient's system or alimentary canal. A case of protracted intestinal hemorrhage in a lady, is now getting well under my care without any other remedy than lime water and milk, alternated with Posole as both food and medicine.

In introducing the Saccá to American society, it may be presented under the anglicised name of maizeade, by analogy with lemonade. It may be confidently recommended to our citizens as a superior substitute for Swain's Panacea, Chambers' Specific, or Graham's Bread, to remedy the evils for which they are respectively extolled; and I add that the habitual use of this cheap, unirritating nourishment will do more towards checking excess in spirituous liquors than all the temperance societies in the United States.

I am, sir, very respectfully, your humble and obedient servant,

HENRY PERRINE.

RARE BIRD.—Last week a bird of great rarity in this part of the kingdom was shot by a gentleman of Boston—the water ouzel, or water creek, or water crow. It is a solitary inhabitant of the mountainous parts of Wales and Scotland, and its habits, as described by Linnaeus and Bewick, are extraordinary—assimilating a little bird that we hear the old inhabitants of this part of Lincolnshire, ascribe to the dancing parties of the roughs and reeves which were the tenants of our morasses in the East and West Fen previous to their enclosure. Bewick, says, "this species is removed from the place it has hitherto held, in all systems, among the land birds; its habits and manners are peculiar to itself. It is chiefly found in high and mountainous parts of the country, and always by the sides of brooks and rocky rivers particularly where they fall in cascades, or run with great rapidity among stones and fragments of broken rocks; there it may be seen perched on the top of a stone in the midst of a torrent—in a continual dipping motion, or short courtesy often repeated, whilst it is watching for its food, which consists of small fishes and insects. The feathers of this bird, like those of the duck tribe, are impervious to water, whereby it is enabled to continue a long time in that fluid without sustaining the least injury. But the most singular trait in its character (and it is well authenticated) is that of its possessing the power of walking in quest of its prey on the pebbly bottom of a river, in the same way and with the same ease as if it were on dry land." What is still further remarkable, this bird is not web-footed, but has the legs and toes short and strong, like those of a crow.—*Boston (Eng.) Herald.*

A writer in the New York Courier and Enquirer, thus closes an emphatic paragraph:—"Every man that has the tail of his horse cut off, nicked or pricked, should have the fore finger of his right hand cut off, and so should the operator."

AGRICULTURE.

(From the Farmers' Register.)

MEMORANDA

OF THE GENERAL SYSTEM OF CULTIVATION AND
IMPROVEMENT PRACTISED BY

FILLING LEWIS, ESQ. OF WYANOKE.

Reports of the practices and opinions of experienced and successful farmers, however incomplete, or limited in their plan, are generally interesting and instructive to those who have still to contend with similar difficulties, and are able to make use of similar means for the improvement of their lands. Independent of these general considerations, there are other circumstances peculiar to the farm of Mr. Lewis, which may cause a report of its management to be more satisfactory than might be presented elsewhere, even though equal intelligence and industry had been exercised, and equal or greater improvements made. Under these impressions, I offer the following memoranda of a visit recently made to Wyanoke, (April the 19th, 1833.) the time of which was diligently employed in viewing the farm, and making inquiries, the answers to which will be here presented. The general appearance of the land will be described as it struck upon the first view of a stranger; but the details of practice, or opinions, will be given as furnished by Mr. L. aided (when he found it necessary) by reference to the diary of his operations.

The lower part of Wyanoke, belonging to Mr. Lewis, is situated on the north side of James river, in Charles City county. The whole farm (exclusive of one hundred and fifty acres of land outside of the enclosure, principally low marsh) consists of six hundred acres of land, almost entirely arable. It is a low peninsula, surrounded by the river and a small creek, except on one side, where a straight land line forms a boundary. The whole peninsula, though nearly level throughout, is no where entirely so; but has a gently undulating surface, which serves to keep the soil abundantly dry, without there being any where enough declivity to be objectionable. The whole of the arable land was cleared long ago; and as its natural boundaries forbid an alteration of the extent of the farm, the quantity of land subjected to tillage has not varied in half a century. For this reason, the rate of improvement may be here estimated with a degree of precision that is rarely attainable on other farms, where new clearings or other circumstances have frequently served to alter the extent of land cultivated. Wyanoke is altogether of that class of low lands which are found at intervals along the tide water of James river—which seem to have been formed by the alluvion of the river, but which formation could not have taken place, unless the water had then both a volume and rapidity very far exceeding what now exist, and a long continued elevation withal, twenty feet higher than has ever been known. Such an origin, apparently, had the fine lands of Curle's neck, Shirley, Berkley, Westover, Flower de Hundred, Brandon and Sandy Point, and various other tracts, which, notwithstanding all the existing diversities of soil, and of elevation, maintain a general resemblance. Wyanoke stretches out so as to form an angle in the course of the river, and the many depressions in the land extend through from west to east, and nearly parallel to each other, seemingly as if the river had passed over in its direct course, forming the land by its sediment, and leaving in these depressions the channels or traces of the strongest currents. The upper or western side of the land is the highest, and the elevation gradually increases through the adjoining land, (Dr. Minge's,) which is of the same apparent formation and general character. But contrary to what might be expected from such natural causes, the upper and most elevated lands are the most argillaceous, and the eastern and the lowest extremity of the peninsula, is a silicious sand, of which

the particles of course are much heavier. This lower extremity has but a few feet of elevation above the highest tides; and the depressions are there low enough to be often covered by the tides, unless where protected by short dykes. The few and narrow strips thus injured or lost, form the only unproductive or waste land within the mass of arable. The western end, which is generally the highest, may be called a good loam of medium texture, equally removed from adhesiveness and looseness. The lowest and some other parts are very sandy and loose in texture, and the great body of land is of different grades between these two extremes. In its impoverished state, and when under tillage, a great part of the farm in dry weather might suffer injury from the force of high winds.

The general fertility and peculiar value of the low lands, referred to above, are well known. Lower Wyanoke seems to differ from all in being more sandy, and until improved, was also much poorer, than the greater part of those lands. Enough still remains unimproved to indicate the general quality of nearly all the farm in 1794, when Mr. Lewis became its owner, and perhaps long after. A considerable space, which has never yet been limed, now appears even more unproductive than Mr. L. estimates its probable yield; viz: fifteen bushels of corn or eight of rye. Such poor lands he finds more profitable in rye or oats, and therefore does not sow in wheat; but supposes it might bring five or six bushels to the acre. The natural growth now on it is very meager, and throughout is in part formed of sheep sorrel and *hen's nest* grass. This piece is very level, and has well improved ground lying alongside. It is rather more sandy than the average of the farm. Except for the reddish brown color of this and the other unimproved land, there is no perceptible indication of its having been rich in a state of nature, which Mr. L. supposes was the case with the whole of Wyanoke, though all was impoverished before he first knew the farm. All the spots that have not been limed (and they are in various places) show a considerable growth of sorrel—and it appears in smaller quantity even in many places that have been limed, thus proving sufficiently the original suitableness of the soil to that weed. The reddish brown color belongs to all the land, being the darker where most improved. The subsoil is not very different from the soil, but is more sandy. No clay any where.*

It is a very general opinion in Virginia, that sandy soils are greatly inferior to clay soils, in their capacity

* Two samples of soil were selected to ascertain by subsequent examination the actual proportions of silicious sand contained. The land from which one sample was taken was considered by Mr. L. to be of medium texture, compared with the whole farm—had been limed at his usual rate some years before, as well as manured, and now supposed to be capable of yielding thirty-two or thirty-three bushels of corn, and afterwards, fourteen or fifteen bushels of wheat to the acre. The other sample was chosen to show the texture of the lightest soil forming any considerable part of the whole extent of the farm. The results obtained were as follows:

1000 grains of the medium soil, yielded

825	—	sand, mostly coarse, and almost none very fine.
161	—	fine clay, &c.
11	—	lost in the process of separation.

1000 grains of the lighter soil, yielded

873	—	sand, still coarser than the other.
122	—	fine clay, &c.
5	—	lost.

Much of the sand of both samples was tinged with the color of rust of iron. The clay was brown, slightly inclining to red. No carbonic acid gas could be expelled from either sample, and therefore, no carbonate of lime was present.

for receiving durable improvement, and yielding the most valuable products and profits to the cultivator.— This opinion has probably grown out of the facts, that nearly all of our most valuable lands are loams of different degrees of adhesiveness, and that our sandy soils are almost always poor, and of little profit to their owners. Another opinion, still more extended, and indeed almost universal, is that though rich sands may be even the best of corn lands, they must be comparatively worthless for the production of wheat.— The belief long entertained that both these opinions are quite erroneous, formed another inducement to present a report of the farm, which furnishes abundant proof that the mere deficiency of clay does not prevent a soil reaching the highest value. Wheat requires a stiff soil to yield the greatest possible product—but such lands require so much labor, and their management depends so much on the season and weather, that their crops of wheat are often less heavy, and still oftener less profitable, than on good sandy soils, where the friability of texture causes tillage to be far cheaper, and the alternations of wet and dry seasons have a comparatively but little effect in injuring the crop, or obstructing tillage. The crops of a sandy soil, or which the maximum product is twenty-five bushels of wheat, would generally be heavier, and certainly would give more average clear profit, than those of clay soils that might bring forty bushels, under the most favorable circumstances. But it is time to bring forward in support of this position, opinions and practice that will be justly deemed of much higher authority, than any deductions or reasoning of mine.

Rotation of Crops, and general plan of Cultivation. The farm was formerly kept by Mr. L. under the three field rotation, 1. corn—2. wheat—3. at rest, under the spontaneous growth of grass and weeds, and more or less grazed. At that time, and long afterwards, this rotation was the mildest in use in lower Virginia. Since 1816, his rotation has been 1. corn—2. wheat on all good land, and oats or rye on the unimproved and poorest—3. clover, mowed—4. clover, grazed. Clover, however, has occupied no more land than had been previously limed. Field peas, which always follow the new applications of lime, take a part of the field of the fourth year; and another smaller part is under turnips. Formerly, one hundred and ninety acres, or one-third of the farm, was every year under wheat, except such parts as were quite too poor—and the average crop was less than one thousand bushels. Now one hundred and forty acres make a field, and the unimproved or poorest parts (usually about forty acres) being in rye or oats, only about one hundred acres are put under wheat, and the annual average crop is now more than doubled. Last year, 1832, when only ninety-eight acres were in wheat, the crop was over two thousand bushels. The present average product of all the land usually put in wheat, is supposed to be twenty bushels—and the corn from the same land the previous year is thirty-five bushels or more.

Though Mr. L. has been, since 1794, attempting to improve his land by using putrescent manures in unusually great quantities, and by his well known careful and judicious general management, still the great improvements made have commenced within the last twelve years, during which time he has been regularly applying lime, and has now given that manure to about three fourths of the land. He had made small experiments with lime as long as six years before, when its use was unknown in this part of the country, except in small experiments. But for the last twelve years, like some other neighboring farmers, he has gone as fully into the practice as the supply of shells, and the disposable labor of the farm would permit. Lime first enabled him to make clover a field crop. Before, it could not be produced with any certainty or profit, except on the richest lots around the houses, which had the best preparation and every care bestowed. It is now an abundant crop

wherever his lime and the sub-equent covering of putrescent manure extend.

The quantity of stable and farm pen manure prepared and applied are unusually great, even considering the abundant supply of materials, compared to the general usage. But no other means for furnishing vegetable substances to the soil are used, no green crops ploughed in, nor the entire growth of grass left any where to rot upon the land. It is preferred to pass every putrescent material through the stables and cattle yards. In this respect the practice of Mr. L. differs essentially from other successful improvers of the soil. His green or meliorating crops of clover, peas, &c. are partly secured for dry food, and the balance consumed by live stock in the field. He has tried marsh mud, (to which his access is very easy,) but found it not worth the labor. It was of a kind composed principally of decayed vegetable substances. Naked fallows for wheat are rejected; and even wheat on clover lay, as being on the whole, less profitable on such land than wheat after corn. This decision is not influenced by a belief that the former practices would be injurious to the soil. He is not satisfied of the correctness of the common opinion, that the soil is impoverished by exposure to the sun.

Burning and applying Oyster Shell Lime.—Close kilns with walls of brick or stone, have not yet been used to burn oyster shells for manure; and until fuel becomes more costly than the additional transportation of the lime, it will be cheaper to use wooden kilns. What are commonly called lime kilns are merely heaps of wood and shells, built up in a somewhat cubical form, by which the burning is imperfectly performed at great expense of fuel, though without much trouble. Mr. L. burns his shells in the following manner. A pen of sixteen or seventeen feet square, is built of round green pine logs, (notched where they lock, so as to come as close together as their form will allow,) and with a floor of similar logs, chinked with smaller pieces, so as to prevent the shells dropping through. The bottom logs of the kiln are laid on four corner blocks, of twelve inches, so as to leave a vacancy of twelve or fifteen inches between the earth and the bottom of the floor, which is to be packed closely with dry wood. The walls of the pen are raised about nine feet; and about one hundred logs of six to eight inches through (which these now put up seemed to be) usually serve for the floor and side walls. The shells are thrown in, and in layers of different degrees of thickness, according to their order, and separated by thin layers of pine wood, cut eight feet long, and split to the usual size for fuel.—The size of the last kiln burnt by Mr. L. according to his memorandum book, was as follows:

Kiln seventeen feet square and nine feet high, inside measure.

The lowest bed of shells eight inches, (he thinks it might as well have been twelve inches.)

The second bed of shells 12 inches.

“ third “ “ 16 “

“ fourth “ “ 20 “

“ fifth “ “ 15 “

“ sixth “ “ 6 “

The layers of wood between were equal, and about six inches. This kiln took one hundred hogsheds of shells, and consumed ten cords of wood in the layers, and three more of foundation or kindling wood. The kiln should be fired in calm weather; and if the wind afterwards rises, it should be kept off as much as possible by a screen of brush, or whatever may be most convenient.

The burning (in preference) is done in March, or as soon after as may be. The newly burnt shells are carried to the field as soon as they are cold enough, and deposited in small parcels of a measured heaped half bushel each, at distances of six yards. The field is previously ploughed, and marked off carefully in checks of six yards square. These small heaps of shells are immediately covered completely, but not heavily, by the surrounding earth being drawn over them

with broad hoes. If a heavy rain was to catch the lime before this covering, much of it would become a wet sticky mortar, difficult to manage and impossible to distribute equally. When secured in the heaps, the moisture absorbed from the earth will usually slake the lime in forty eight hours. The heaps are then cut down and mixed with hoes, and carefully spread so as to cover the field very equally. The land is then well harrowed, more effectually to distribute and mix the lime with the soil. The quantity applied to the acre is about seventy bushels of the burnt and un-slaked shells, which quantity is produced by burning six hogsheds (one hundred and eight bushels) of shells; and the same, if well burnt, will swell in slaking, to one hundred and twenty five or one hundred and thirty bushels. The lime is always put on a part of the field of the fourth year, and is put under field peas the same year. The red, or cow pea, is preferred, being considered most profitable for live stock; and as that is a late kind, it should be planted as soon as possible after the twentieth of April, that the crop may mature. Two after ploughings and one slight hand weeding serve to cultivate the crop; and its product, Mr. L. thinks, though without having made any experiment or careful estimate, usually pays the whole expense of the liming. He has the bulk of the peas gathered by hand, but not closely; and the remaining pods and vines are eaten on the ground by cattle. The peas are partly ground into meal and mixed with other food for mules, for which use they are much valued. Mr. L. has never compared the products of peas with corn on equal land, but supposes that more bushels per acre would be obtained from corn.

Mr. L. does not think that a heavier cover of lime would be much more effective. He showed the ground where an experiment had been carefully made to test this question, and which is still on trial. Three years ago a certain space marked out through equal land, was limed with a second cover equal to the first and usual quantity, which had been applied to the field four years earlier, and was followed by manure from the stable and farm yard, the year after the first liming. The field is now in wheat, and the growth excellent throughout, but unequal, and the part doubly limed is not perceptibly superior to that on either side. Still he expects a different result on a soil less light, and applied his last lime as a second and lighter dressing to the stiffest loam, in preference to the lightest land that had yet received none. He has found that the lightest soils here, and the stiffest among the clay soils of his farms in Gloucester, are neither so much improved by liming as are soils of medium texture.

The whole expense of liming has not been estimated by Mr. L. nor has the benefit from lime alone been ascertained. He always covers with putrescent manure the whole of the previous year's limed land, and sows all in clover. The durable benefit obtained from the manure in part, and the whole value derived from the clover, are indirectly the effects of the lime. The expense bears a very small proportion to the profit.—The only difficulty in liming, arises from the scantiness of the supply of shells, and the fear that they will be still more scarce, as their use extends. Small vessels now bring cargoes of oyster shells, and sell them (on board) at sixty-two and a half cents the hogsheds. The labor of landing them is an additional expense to the farmer.

Gypsum had been frequently tried on clover as well as other crops before liming, and with little or no benefit. It has not been tried since liming, but he is now about to make the experiment again.

No value is attached to the caustic quality of the lime, and indeed it is supposed to have lost that quality by exposure under the usual treatment, before the succeeding crop of peas begins to grow. Ten or twelve days are generally allowed to intervene for this purpose, between the spreading and harrowing in of the lime, and the planting of the peas. When peas were planted immediately after the spreading, their

growth was thought to show some injury from the remaining causticity of the lime. Still Mr. L. is not satisfied, that an equal quantity of mild calcareous earth in any other form, would serve as well as lime prepared by burning. Without denying the correctness of that deduction from his opinions and practice, he prefers adhering to the practice which experience has proved to be highly beneficial and sufficiently cheap. No banks of fossil shells are on his land, nor nearer than eight or ten miles distance by water carriage.

As one-fourth of the farm has not yet been limed, the general improvement by that means is still in progress, and the increase of crops may be fairly supposed to be yet much below what a few more years of the same practice will exhibit. Whatever increase of product has been obtained is almost entirely owing to lime, considering its indirect as well as its direct benefits. Without lime, there was (and could be) no improvement from clover; and all the putrescent manure used before liming, seemed merely to keep the products of the farm from decreasing. This opinion requires no stronger proof than the following table of all the crops of corn and wheat made for twenty-one successive years before liming was begun, and when the farm was under the regular three shift rotation. The fulness and accuracy of Mr. Lewis' diary, has enabled him to furnish me with this statement.

YEAR.	WHEAT. Bushels.	CORN. Barrels.	Price of corn sold.
1796	1162	516	\$3 75
1797	896	842	3 00
1798	975	650	3 00
1799	1280	661	2 50
1800	740	620	4 41
1801	1400	750	3 33
1802	1153	811	2 46
1803	910	625	4 00
1804	1150	573	5 00
1805	863	650	2 33
1806	1160	524	5 00
1807	989	650	2 00
1808	1060	646	2 33
1809	187	700	3 50
1810	1060	750	3 75
1811	1255	544	4 00
1812	905	652	3 00
1813	820	667	3 33
1814	710	484	3 42
1815	1210	448	4 00
1816	912	425	7 00
Average, 1052		630	Average.

Though this table shows much difference of product from good and bad seasons, there is no apparent average increase in the product of any one field. The crop of wheat, which stands first in each division of three years, was in every case on the field which was in corn the previous year; and in like manner for the second and third crops. Thus each division of the corn crops shows the whole product of the whole farm in corn—and the same as to the wheat, for as much of each field as was worth putting under that crop.—The fields were about one hundred and ninety acres each. When divided into four fields, after 1816, the crops of the first year were diminished, by each of the fields losing about fifty acres in extent, notwithstanding the counteracting benefits then beginning from lime. The last crop of wheat (1832) was two thousand one hundred and ninety-nine bushels, from ninety-eight acres, and eighty-eight bushels of seed. The season was good for wheat—the field is rather more productive than the general average of the four, but is not the best of them.

The crops of corn have not been so much increased as those of wheat for several reasons. The unimproved part of each field is now as formerly, always under

corn in its turn, and it may be well supposed that no increase of product is shown there; and the former impoverishment of the other land did not lessen the yield of corn so much as wheat, from the peculiar fitness of this sandy soil for the growth of corn.

Since the putrescent manures have succeeded lime, it is not supposed that their beneficial effects have been lost by time and after cultivation. It needs no other evidence than the foregoing table of crops to prove that the effect of the manure formerly applied must have lasted but a very short time.

Putrescent Manures.—About fifty head of cattle are kept, (not counting the calves under a year old,) sixty sheep, ten or eleven work horses or mules, four saddle and carriage horses, and as many hogs as will furnish about fifty annually to be slaughtered for bacon. From two thousand six hundred or two thousand seven hundred good horse cart loads of manure from the stables and littered pens (with some other putrescent matters) are usually made, besides the feed manured by naked cow pens in summer. The whole space manured already for the present corn crop, amounts to fifty four acres. The vegetable materials used as food and litter to make this manure, are the straw of the wheat crop, the stalks and the better forage of the corn, the clover from as much as can be mowed of the limed land of one field, and the coarse hay of eighteen acres of wet marshy meadow.—Leaves raked in the woods, are enough valued to be carted (when leisure permits) two and a half miles, which is the distance from the woodland belonging to the farm. Five or six acres of turnips are also made, which add greatly to the value of the manure, as well as to the food of the milch cows, oxen, &c. The winter pens for cattle are made in the field to be manured, which is always the land intended for corn. Plenty of litter is furnished, and early in January the rickling is commenced, and continued from time to time as the state of the weather and the manure may require. The stable yard has a long pit eighteen inches deep, into which the fresh manure is thrown, with the litter cleared out of the stables.—This general clearing out is not done except on rainy days, or other leisure times. When quite wet, this manure is carted from the pit, to aid in forming a rick made just without the cow pen. For this purpose, the parcels of litter from the cattle and from the horses, are laid in alternate beds on each other, two feet of the former to one foot of the latter. The ricks are built sixteen and a half feet wide, (being the width of three corn beds,) five feet high, (which lessens to three, by settling and fermentation,) and of any length that is convenient. The materials are thrown on very lightly, and the building proceeds from one end of the rick, so that each part is soon finished, after its foundation is laid. This rickling is done whenever the manure is wet enough, without much regard to the time the materials have been exposed to trampling. The ricks usually begin to ferment in forty eight hours, and in fifteen or twenty days may be carted to the field. Its texture will be then considerably softened, though the manure when used, cannot in general be said to be as much as half rotted. Poles are placed in different parts of the ricks when they are made, and by pulling them out and feeling them, the heat of the whole mass is known. By this mode of fermenting, *fire fangling*, (the white moldy appearance, so common on manure,) is avoided, and the whole rick makes good manure. The cow pen litter when used alone for manure, was always found very weak. Mr. L. thinks it proper to heap and ferment the manure, so as to break down the texture of the coarse litter, but does not approve of thorough fermentation, any more than the total want of it.*

The times of carting out the manure from the ricks, do not depend so much on their age (after having been heaped fifteen or twenty days) as upon the state of the land. When carried out, the heaps are dropped at twenty four by twenty-seven and a half feet, spread and ploughed under very carefully, and as soon as possible to avoid waste from exposure to the air. The whole job had been completed but a few days before the day of my visit, (April 19th.) The manure now making in the stables and littered pens, will be used for turnips after being ricked. Of course, the season, and the length of time will cause the fermentation to be more complete. Mr. L. does not approve of top dressing, though no actual experiment had proved the loss incurred by that practice; but supposes it may be advisable when the manure is perfectly rotted. The cattle will now soon leave their last littered pens for moveable pens on the naked land, as is the usual practice. During the summer, about five acres are dunged in this manner. The land intended to be manured by the summer pens, is ploughed first, and as much as is manured in good time is prepared for turnips.

The raked leaves are used only for the hog pens, in which they are put so thick as to prevent the hogs from rooting to the earth below. Enough of this litter is used to make about three hundred loads of manure, the quality of which is very good. The pine leaves are considered the most valuable. All the hogs are confined in pens through the winter and spring, until the clover is enough advanced for their grazing, when they are turned upon the field of the fourth year. They are now confined, and on corn feeding. Forty hogs nearly grown, in one pen at this time, are kept in thriving condition on two bushels of corn a day. Simblins are raised for hog food, and considered very valuable for that purpose. It is not from choice that the hogs are thus kept in pens, but because if turned outside of the enclosure they are often lost or stolen. The cattle and sheep have some advantage from one hundred and fifty acres of land outside of the enclosure, of which, much the greater part, however, is low tide marsh, from which the cows can get very little food, and the sheep none.

Throughout the winter the cattle are confined to their pens, except during the short time required to drive them to water twice a day. The facility of the general opinion that close confinement of cattle in littered pens is injurious, by making them both lousy and diseased, is sufficiently exposed by the good condition of the stock of Mr. L. under this treatment. The injury imputed to this cause is in fact, produced by a want of enough litter to keep the cattle dry and comfortable.

With sheep, the case is different. Though the want of suitable pasture ground for them, compels Mr. L. to pen his small flock during winter, they suffer from the confinement greatly; and many would

opposed are found on the farms of several intelligent gentlemen, all of whom are good farmers, and successful improvers. The practice of Mr. Lewis is described above. Mr. William Minge, of Sturgeon Point, leaves all his manure undisturbed on the farm yard until after harvest, when it is moved, put into large heaps, and covered with earth, to remain until used the succeeding spring on corn. Mr. John Selden, of Westover, uses the whole of his farm yard manure the spring it is made, for corn, without heaping to ferment. Mr. Hill Carter, of Shirley, leaves his manure in the yard, thickly covered with straw, until August and September, when it is carried out and ploughed in on his fallow for wheat. Mr. Collier Minge, of Walnut Grove, approves of and practices top dressing on wheat. Some other differences, though less striking than these, may be found in almost every farmer's practice; yet, each one thinks his own course the best to avoid (what all alike fear) the great waste of the enriching principles of the manure. Such opposite opinions and practices, show how much is lost for want of free communication and discussion, and that by an interchange of opinions, each individual perhaps might both receive and dispense instruction.

die, but for the succulent food furnished them in turnips. Peas are given to them also, in considerable quantities. The management of sheep which Mr. L. adopts, is not such as he deems profitable, or would recommend to others. He considers their grazing so destructive to grass, and consequently so injurious to the soil, that it causes him to keep no more than will serve for the supply of mutton and lamb for the family.

In being my object only to report the general system of cultivation and improvement, I do not enter upon the feeding of live stock, except as connected with the making of manure. Yet there is no part of the economy of Mr. Lewis' farm more admirable (as is generally supposed) than his manner of feeding, particularly as it regards horses and mules.

Preparation for Corn.—Low as is the Wyanoke land, and with a surface seemingly shaped so as not to permit much surface water to run off, very little draining is any where requisite, and cultivation with a level surface is admissible, except on some of the land so low as to be affected by the highest tides. Generally, the open texture of the soil and subsoil is sufficient to pass off all superfluous water from the surface.

Not a spring bursts out any where on the farm, and there is no need for any side ditch to cut off such oozing waters as form the greatest objection to our hilly lands. This absence of springs is one of the great advantages possessed by the cultivators of soils formed like Wyanoke. But though ridges and water furrows are not wanting to keep the surface dry, the corn land intended to receive the manure is always ploughed and tilled in five and a half feet beds, under the belief that the manure can in that manner be best secured in the soil, and less disturbed and exposed by the after tillage. Still, the manure is not accumulated in the former water furrow, when the beds are reversed; for care is taken so to spread it, that it may be dispersed as equally as possible through the whole width of the bed. The land not recently manured is ploughed flat early in the winter, the rows laid off in checks, and tilled by double shovel ploughs, and other implements suitable to the friable and yielding nature of the soil. The labor of tillage is very light, considering the richness of the land, except where wire grass grows; and even those spots are made nearly as easy to cultivate as the balance, by removing that abominable weed at an enormous cost of labor, before planting the crop. The growth of wire grass seemed the only considerable evil attendant on the numerous advantages of this farm. The sandy and rich soil now made calcareous, is as favorable as possible to the growth and increase of this plant. Mr. L. computes the labor caused by wire grass to be equal to one-fourth of the whole tillage and management of his crop of corn. His most laborious operation is conducted in the following manner. When breaking up the land in December, the ploughmen mark every spot of wire grass turf by setting up small sticks, which are provided in great numbers for the purpose. These marks are necessary, because when the soil is well turned five to six inches deep (five preferred to a greater depth) the wire grass can scarcely be seen until it begins to grow, which is late in the spring.—In the latter part of winter, and whenever the earth is fit for the operation, men dig up the long roots with three pronged hoes—such as are described and recommended by Taylor, for digging, and loading with coarse manure. These tools are made strong, and are admirably suited to taking up the wire grass. The roots which are thus obtained in great quantities, are shaken clear of the soil, heaped when dry, burnt, and their ashes scattered on the land. At this time, they are carted off and thrown into a small piece of adjacent marshy ground. The burning, or throwing away of so much vegetable matter, which also could not be entirely cleared of the rich mold in which it grew, seemed to be a waste of materials for manure, not according with Mr. L.'s general practice. But he considers wire grass roots as but a poor litter—and when

*It is surprising what different opinions are held with regard to the most advantageous preparation and economical application of farm yard manure. Even within the small county of Charles city, practices the most

he formerly tried it for manure, its life was never entirely destroyed, before it was carried out to the field to increase the stock already growing there.* Six men were engaged in this job at the time when these observations were made, and they had still ahead of them a large portion of the field thickly marked by the sticks which directed to the concealed enemy.

Mr. L. has his seed corn prepared in a manner which he finds effectual in preventing crows from eating it. They will make a sufficient examination throughout the whole field, and then move off to some other place offering better fare. The same means, however, are not sufficient to guard against blackbirds. The seed is treated in the following manner:—To a convenient quantity of corn pour hot water, keeping the corn well stirred as long as the water is pouring on. The water may be almost boiling without injury, if the corn is kept in motion. After standing in the water about twelve hours, the corn is drained by being placed in baskets, and then spread on a table. — Tar and sturgeon's oil (or train oil) are then well mixed with the corn, in the proportion of two pints of tar and one of oil to three bushels of corn. Enough quick lime is then added to cover the grain, and he fixed by the tar and oil; and finally one gill of pound-ed sulphur is well mixed with each bushel of corn.

Plant.—The quantity of seed given is on y three to three and a half pecks to the acre, generally—and only a bushel for the best, or the sun-est soil. Thicker sowing considered injudicious on s of so light. An observer riding through the fields at this time, would not suspect that so small a quantity of seed had been given, as the growth looks thick enough, as well as very luxuriant. Many parts of the field now appear as if the crop would lodge. Mr. L. supposed that some of the best spots will produce at the rate of thirty bushels to the acre. His lodged wheat is cut with reap hooks.

The land manured for corn is kept in beds through the cultivation, to prevent as much as possible exposing the manure. For the same reason, the wheat is afterwards sowed on the surface, and covered by small (double shovel) ploughs. All the other land is ploughed before sowing, with two horse ploughs, throwing several corn rows into one flat bed, and the seed is then sowed and covered with harrows. The slight covering of the seed is not supposed at all injurious to the crop. The beds formed in ploughing for wheat, are not needed (except in a few situations) to keep the land dry, but are useful to direct the sowing of clover seed.

Turnips and other Succulent Crops.—Mr. Lewis decidedly prefers turnips to any other root crop. He supposes his usual product of turnips, (without a bad season or some other serious disaster) equal to eight hundred bushels the acre. He does not believe that turnips (in this country) deserve to be considered as an improving crop, as they are held to be in England; and neither does he concur in the general opinion entertained among us, that they are extremely exhausting to the soil. To support his defence of this plant, he showed the land now in wheat, which was manured by summer cow pens in 1841, and only part of which was put in turnips, and the whole in corn the following year. The wheat on all is very fine, and perceptibly better on the part which was not under turnips; but the difference is so small, as to sustain the opinion that the injury caused by the turnips, bears no comparison to the value gained from that crop.

Parsnips and carrots are also made in smaller quantities, to furnish juicy food to milk cows, &c. after turnips are unfit for use. Carrots require much richer land than turnips. Some rich bits of orchard grass,

* A farmer on lolly land can use wire grass advantageously to lay on his numerous *guts*, where the soil has been entirely washed away. As wire grass cannot grow on very wet land, the roots if heaped in a wet pit surely would die and rot. The green roots contain much saccharine matter, and are eagerly eaten by hogs, and also by moles when thrown into the stables.

and lucerne also are kept for green feeding before clover is enough advanced. None of these crops except the turnips occupy any part of the four fields, and therefore, do not affect the general rotation, nor come within the range of my inquiries.

Postscript. A subsequent visit to Wyanoke (May the 13th) has enabled me to supply some deficiencies in the foregoing memoranda, particularly as to the management and uses of *clover*. A few years only have passed since the establishment of the fact that the profitable field culture of clover was possible in the tide water district of Virginia, except on some soils of rare and peculiar qualities. Even now, it is far from being generally known that calcareous manures (and nothing else without them) will serve to remove the general incapacity of our lands to produce clover—and will make that crop safe and valuable, even on some of our most worthless natural soils. The methods for making clover hay in the northern states, and in England, are unsuitable for us, not only because of the difference of climate, but also of our cultivation in general. When our clover is ready for mowing, we are pressed with the heaviest and most essential part of the tillage of our largest and most important crop—corn. On this account, it is not so important for us to make hay of the best possible quality, as to obtain the greatest value in quantity and quality combined, for the limited amount of labor which we can then devote to that purpose. For these reasons, as well as the very limited extension of the clover husbandry among us, I hope at least to be useful to novices in this business, by stating the experience and opinions of a farmer who has had to contend with every common obstacle to the production of this important crop.

Mr. L. saves his clover seed from the second growth (after once mowing) of the second year of the grass. The dry heads are gathered by a simple utensil, the operating part of which is merely a short piece of plank, having the end cut into a comb like form: the long slender teeth allow the stems to pass between, but break off and save the heads, which fall in pieces at the same time. The seed thus saved are not only cheaper, but they come up better than the clean seed brought for sale from the northern states. They are sown in February, and the beginning of March on the wheat land—No harrowing or other means of covering the seed is considered necessary. To distribute them at the proper rate to the acre is the only difficulty—to surmount which, the lengths of the wide beds are measured as often as necessary, to fix their extent nearly—and each seedsman scatters over a certain assigned space, the proper measure of seed. If he leaves a remnant at any one trial, he will know better how to suit his casting to the next piece of land. A flour barrel of seed in the chaff, pressed in very lightly, is equal to a gallon of clean seed, which is our usual allowance for an acre; but Mr. L. thinks that quantity too small for good sowing, and gives one and a half gallons, or one and a half barrels in the chaff, to the acre.

The next year, mowing begins early in May, for green food for horses and mules. It is generally thought that green clover is weakening and injurious to working horses and mules; and some of us who hold a contrary opinion, are yet compelled to yield to the prejudices of our overseers, that we may deprive them of the ready excuse which green clover feeding would furnish them for slow and insufficient ploughing, or poor teams. Mr. L. has a day's allowance mowed in the morning, which is thrown into small heaps as soon as it is clear of dew. This is used for feeding at night and the next morning. Two well filled horse carts are brought up every night and used at the two feedings. The long food for mid-day is always of dry fodder. Corn, as usual, is given at every time of feeding, but less is eaten, from the greater relish of the horses for the clover. So far from any injury being sustained, the horses seem to improve from the use of their green food. It should be men-

tioned, that one or two of the work horses are generally not at work, and this share of rest they have as they most need it. At other times all are at work together. The second growth is never mowed for green food, as its salivating quality makes it always hurtful.

Owing to the very succulent nature of clover, and the variability of our weather, there is much in risk in curing clover hay. With all the care that can be used, the thin leaves will generally become crisp, and fall off in the various handlings of the hay, before the large sappy stalks are enough cured to stack. If a soaking rain or even heavy shower falls, the best made cocks of clover hay will be so penetrated with wet, as to require all the trouble and loss of drying. After sustaining much loss of labor and of crop from these causes, Mr. L. has adopted a method which he has found to save a deal of labor, and on a general average, to furnish better hay. His mowing for hay goes on in any weather, except it is raining too heavily for laborers to be out of the house, or unless the earth is full of water. Three swaths are raked into one high ridge, immediately after mowing, if clear of dew, or as soon afterwards as the dew has dried off. This operation substitutes all the usual and various labors of opening, turning, putting into cocks, &c. The rows remain, taking the sun and rain, until the hay is cured, which may be in five or six days of common weather, and has been as long as ten in the worst. The surface is so burnt by the sun as to cause the row to appear to be ruined by the exposure; but the injury is only superficial, and that cover protects what is beneath. If rain comes, as usually happens, the whole row is made completely wet, but it is thin enough to dry afterwards without moving. When cured, it is thrown into small cocks, which facilitates the loading of the wagons, and also serves to air the hay, and remove any remaining dampness. If the weather is good, the hay is moved without delay to a house where it is packed away, or otherwise put into large ricks containing from 12,000 to 20,000 lbs. of hay, and which are covered thickly with straw. If the weather is threatening, the cured hay is put into small stacks until it can be put into the house. From the description of this mode of hay-making, it might well be supposed that the hay would always be bad, and generally worthless as food.—But Mr. L. has commonly made better hay in this manner, than when he used much more care and labor—and has never entirely lost any, from the worst of weather. The weather can scarcely be expected to be worse for hay-making than in 1830, yet his clover which passed through that trial, made what might be called hay of better than middling quality.* In general, the leaves

* After hearing this statement from Mr. L. I accidentally observed his memoranda of the circumstances referred to, as we were looking into his dairy for some other facts—and, with his permission, I took the following abstract, relating only to the weather and other circumstances connected with the hay-making.

1830—May 30.—Heavy rain.

June 1.—Began mowing for hay. Weather still very threatening, but no more time can be spared.

4th.—A very great fall of rain.

5th.—The earth so saturated with water, that no field work (nor mowing) could be done.

6th.—Rain threatening through the day, and at night it came so heavily, that again on the 7th no field work.

8th.—About sixteen acres of clover have been mowed, and raked three rows into one—the crop a heavy one for our land. Such heavy rains have fallen, and have driven through the clover ridges, that unless we have clear weather from this time, I fear we shall have a very indifferent crop of hay. Have been five days mowing. Weather now fair, and we are putting the hay into cocks previous to stacking.

9th.—Fine day for hay-making, since the last clearing off, but unfavorable to corn, being uncommonly cool. For five days past, the thermometer has been each morning as low as from fifty-two to fifty-four degrees in the shade.

remain on the stalks, and the greater bulk of the hay retains its green color.

Though the general plan of the rotation is to mow the clover the year after wheat, yet the mowing never extends over the whole field for want of time and labor for so heavy a job. The balance of the field is grazed.

Summer Fermented Manure. Much the greater part of the manure is made during the colder part of the year, because there is neither enough litter left, nor enough spare labor during the warmer months, to profit fully by the supply of animal matter furnished by the stables alone. The use of litter on summer cow pens would be rejected, even if it was more abundant, as a wasteful application, from the certainty of great loss from fermentation. Still some loss from fermenting bulks of manure must necessarily be suffered. When all the fermented (or ricked) manure is carried out in April, the cow pens is moved to the land intended for corn the next year, and littered; and the cattle remain there the short time that intervenes before the naked penning is begun. This litter will be too dry and too poor for early heaping; but when wet weather allows the stable dung pit to be emptied, its contents are carted to the cow pen, and a rick formed, as was before described, by using alternately layers of the two kinds of manure. This has not yet been done: but the pit was full of dung, and flooded with water from late rains. This is the proper state of things for the operation of rickling.

The scarcity of litter in the stable during summer, prevents the heat that would otherwise take place, and no inconvenience is sustained by the horses from that cause, between the times when the stables are emptied of the manure. In dry weather, the water in the pit settles to the bottom, and the upper part of the manure would suffer by becoming too dry. To prevent this, five or six holes are dug through the dung to the bottom of the pit. In these the water collects; and every morning it is thrown over the top of the manure, which is quickly done with broad paddles.

The heaping of the litter of the pens where bees and milch cows had been kept until lately, was going on, which gave me an opportunity of witnessing the great superiority of the three-pronged hoes, and three-pronged forks to our common tools, for moving coarse manure. Few, perhaps, would consider the use of these tools of much importance from any description of their advantages; but whoever sees them used for five minutes, will determine never again to heap, or load with manure, without their aid. This manure, though coarse (being principally corn-stalks) was rich from the fat animals kept on it, and the richness of their food, and was quite wet. I should expect it to suffer from *five fanging*, the effect of violent fermentation; but Mr. L. entertained no such fear. This, and the other ricks that the stable dung will help to form, will be used for turnips.

It is remarkable that Mr. Lewis' fields are now where infested with blue grass, which is the worst of plagues on most good loams, and especially after liming. It is true that this grass thrives best on soils that are both moist and somewhat adhesive, as well as of good constitution. If, indeed, it is the want of sufficient moisture and adhesiveness that prevents this grass growing on any spot here, the fact furnishes stronger evidence of the dryness and sandiness of the soil, than would be inferred from my description. Without drawing that inference, I merely state the fact.

Partridge peas, which are so troublesome in wheat crops on all calcareous soils, and more so on light than stiff, are remarkably scarce on Wyanoke; but the exemption from the ill effects of this pest will not last long, as it is increasing fast on the limed parts of the land.

11th.—Fine morning. Thermometer sixty-five degrees. Yesterday hauled to hay house twenty-five loads. This day we continue—two more loads to the house, and twelve to the stack. Next day finished the stack with seven more loads or nineteen in all."

HORTICULTURE.

THE SEASON.

IN A LETTER TO THE EDITOR OF THE AMERICAN FARMER.

Greatfield, Cayuga Co. N. Y. 6 mo 10, 1833.

The last winter was comparatively mild, the mercury in the thermometer scarcely sinking down to zero. The spring opened not earlier, however, than usual, but as it advanced, we had hot weather, at various times when the thermometer was above eighty degrees. Vegetation is in consequence, two or three weeks in advance of some other years. We had ripe strawberries on the 21st *ultimo*, a circumstance which has not occurred before within my recollection; and on the 26th *ultimo*, we had ripe cherries. In 1826, we had ripe cherries on the first of the sixth month, and that was considered a very rare occurrence.

It may be remarked that we cannot have *early fruit* without having *early varieties*. I have not the name of our earliest strawberry—the cherry was the "Early May," which though small, is delicious when fully ripe.

The difference of climate between Baltimore and this place is, probably not less than five weeks; in particular seasons it may even be greater; but this is to be understood of the spring, or of the early part of summer. Autumnal frosts scarcely occur sooner here than along the shores of the Chesapeake.

We have a fine prospect of fruit, although many of the blossom buds of the peach and of the apricot, were killed, perhaps more than two-thirds of the latter, yet the trees have a full crop. The same may be said of our plums and nectarines. Pears which set last year most remarkably thin, now promise abundance; and it is particularly gratifying to discover that the *aphides*, which at that time threatened the trees with destruction, have almost disappeared. Whether this result is owing to the increase of other insects—their enemies, or to some other cause, I have not been able to discover.

The curculio, I think will not do us much damage. From the havoc which we made amongst them last year, when we destroyed almost thirteen hundred in my fruit garden, they have not yet recovered; and I feel encouraged, that with a little attention properly directed, these colonists will no longer be formidable.

Into your valuable paper of last year, an account of our method of taking the curculio was copied, in which I showed the advantage of a *smart stroke* in detaching them from the trees. To strike against the side of a tree, or limb,—bruises it; and it is, therefore, necessary to provide a *striking place*. This spring, I sawed off one or more lateral branches of about an inch in diameter from each tree, leaving a stump to project, from which I removed the bark that the wood might *harden*; and also, made the head convex with a knife, to prevent it from *battering* under the mallet. It is important that these stumps project nearly at right angles from the tree; otherwise the effect of the blow will be lessened.

On some trees, however, there are no limbs to spare, or none that project in a good direction. In those cases, something more *artificial* must be provided. A *turned* pin of *hard* wood, with a shoulder, may be inserted; and if painted, it would continue for years. The harder the wood, the better; for the more violent the jar, the greater is the certainty of bringing them down from the tree. D. T.

TO DESTROY CATERPILLARS.—A piece of woollen rag had been blown by the wind into a entrant bush, and when taken out was found covered by these leaf devouring insects. Pieces of woollen cloth were immediately placed on every bush in the garden, and the next day the caterpillars had universally taken to them for shelter, and were then easily destroyed.

* American Farmer, vol. 14, p. 125.

(From the Genesee Farmer.)

FINE FRUIT.

The letter from which we take the following extract, was received more than two months since and mislaid, or we should sooner have given it a place in our pages. It is from a subscriber in Hudson. If it shall induce but one farmer to plant a grapevine, we shall think the space it occupies well filled.

"An increasing attention is paid in this country, as elsewhere through the state, to agriculture; but a practical *action*, I wish I could say *attention*, is increasing here in a still greater degree in horticulture. In this, however, little more is yet done here, than to receive the rays of light which stray from other more luminous points, and to direct them as well as we can into gardens and orchards.

"The real difference between first rate fruit of any species, and the common kinds, is understood by few; and by fewer still, is the difference understood between allowing such fruits to grow, as spring spontaneously around them, and by skill and attention *begetting* upon dame nature in her old age, a new, more lovely, and charming progeny, and training them to possess and exhibit more beautiful and excellent qualities, and to exercise a more benign and pervading influence, than any of her elder born. A diffusion of more of the *elements* of horticulture, is what most of us need.

"The error in most papers of the kind, and I think of yours, is, that it gives its readers credit for more knowledge in the first principles of the art than they possess, or think they possess; and as they are uniformly too modest to avow their ignorance, they continue unenlightened, and struggle daily with difficulties, without practice, without tuition which is radical, and without leisure for that constant observation which alone can compensate for a want of primary instruction. I speak from experience. I was bred to practical agriculture, as it was understood at and around the house of my childhood and youth. But horticulture, in its elements, and in its choice and elegant departments, was all a mystery to me. And so it was with others, and is so yet to nearly the same extent. My farm now, is less than an acre. The choicest things which can be grown to regale the senses and awaken devotional feelings, are those and those only, which seem worthy to occupy my leisure hours, adorn the play grounds, and look on the pastimes of my children. I have not time to spell out from the book of nature, the lessons I am anxious to learn; I do not know on what page of that glorious book I may find them, even to spell at. The gardens, and the rich fruits of the experienced, are out of the range of my vocation. What I occasionally see of them, seems like glimpses of enchanted ground, and I sigh in vain for their possession; for like most others, I am chained down to duties which lead me perforce away.

"Where then, but from the press, and in the periodical page, am I, and those like me, to find the information I need? Four years ago I began my little plantation. I thought, among other things, to construct a large harbor, and have it covered with vines, that my infant brood, in the open air, might be sheltered from the burning suns of summer. I then thought the wild grape of my native woods, for hardihood and foliage, the best for my purpose. Opportunely a number of the New York Farmer met my eye, in which I first learnt of the Isabella, red Bland, and others, hardy as those which clothed the hills I rambled over in boyhood, and far exceeding them in luxuriance of foliage and excellence of fruit. Immediately I sent my subscription for the paper, and my order for the plants I wished, and for two years past, myself and household have literally enjoyed, and "sat under our own vines," and gathered from them in abundance the fruit of our labor. I now have vines of almost incredible growth of eight varieties of hardy grapes of great excellence, besides foreign varie-

ties; most of which have borne much fruit for two years, and interlacing their long branches far above our heads, they reached toward us as if in mockery, their rich clusters of different colors, side by side.

"In the fruiting season, it is a rich feast to the eye and to the heart, not of children only, but also of any one, who can look through these good things of a gracious Providence, to the great Giver of all! But though most of my neighbors suppose me before them in horticulture, and in a single branch of it I may be, yet in all things else I am like them in ignorance of its principles, and of nearly every thing useful to the unpractised. We want to be taught its alphabet—its simplest combinations—its first operations—its plainest processes; the very things which the adept supposes the child must know. Of these we are all, nearly all of your subscribers deplorably ignorant; and too proud to ask. Those who contribute to your work, seem desirous to show their science,—their rare discoveries. All this is well; but it is not well that this should be all. The season is at hand, when 'line upon line and precept upon precept,' of the most familiar things to the initiated, will be like grains of gold to ninety-nine hundredths of your readers. I wish I could deposit such precious seed, that it might weekly fly, on thousand, thousand wings, and bear abroad from your press, embryo, wealth and happiness to all the land. But though I cannot, there are those who can, and I hope the season as it opens will teem with it."

(From the London Horticultural Register.)

STRIPED HOUSAINEE MELON.

This melon is, to the present day, scarcely known in this country; in fact, it was not at all known, until Mr. Knight gave a description of it in the Horticultural Transactions, of 1831.

The striped Housainee melon is a noble fruit, one of great beauty and excellence; its skin is firm, but thin; the rind under it, and the fleshy cellular substance adjoining, to the depth of rather more than the eighth of an inch, is of a bright green, gradually becoming paler, till it meets and blends with a bulk of the flesh, which is of a pinkish buff, or salmon color; the green portion is not quite so tender and juicy as the internal substance; but the whole may be eaten so as to have nothing remaining, but the thin exterior integument; there is no fraud in this fine fruit, all is juicy and eatable, the flavor is delicious, the odor that of a fragrant apple, and the fruit will long remain good without decay.

In its form this melon resembles an egg, the stalk end being more enlarged than that of the blossom. It is, during its early growth, of a dark green color, but, as its age advances, the stripes become very apparent; they are of a full sombre green, and divide the surface into distinct marked portions, leaving it, however, perfectly free from grooves or furrows; and hence this variety may be styled a *smooth melon*, although it finally becomes reticulated with an ash-grey colored net work. When near to maturity, small greenish yellow spots are manifest among the interstices of the netting, and a clear yellow circle surrounds the part at the insertion of the footstalk. There is no determinate change of color, that absolutely marks the state of perfect maturity, at least I have not perceived such; the general tint appears to me to be a glaucous or sea-green, covered more or less with a pale greyish tissue of vermicular reticulations. In some individuals, the green stripes remain very conspicuous to the last; in others, they become almost obliterated.

The plant, in its habit of growth, is one of the finest and most interesting objects imaginable. The stem, if led perpendicularly up to the height of three feet, will comprise about ten clear joints. From each joint, at its angle, a noble leaf nearly a foot in diameter is produced; it is supported by a *petiole* (footstalk) about ten inches in length, that takes a most

graceful double bend, in figure resembling the branch of a chandelier. The plate of the leaf is of a most vivid green, its surface rough, with short bristly hairs. In shape it is obtusely heart-shaped, and very broad near the base. From the axles of these leaves, lateral shoots would naturally be sent forth, but each of these is to be removed to a certain height, for a reason that will in due time be assigned.

The flowers both male and female are small, frequently not exceeding three-fourths of an inch in diameter, at the extreme edges of the *limbus* or border, they are of a sulphur or pale yellow color, rather few in number. The males, as far as my observation extends, are produced somewhat before the fertile blossoms, and this appears to be a wise provision of nature, to insure the safety and perfection of the fruit; the melons formed above the tenth joint are generally found to set with greater certainty, and to grow to a greater size than others that appear during the infantile state of the plant, nearer to its roots.

"The Housainee melon," as Mr. Knight justly observes, is upon the whole "of very easy culture," and the plant very productive of fruit; but "that it is very long in ripening." When ripe, however, he adds, "it remains in perfection, a very valuable quality to the grower." Another feature, and one that he deems of great moment, is, that "the natural habits of the plant, which he feared would not prove permanent, he has founded to be strictly so." I have quoted his own words to me, merely changing the person, and I may add, that the only circumstance worthy of real regret is, that the fruit is not only tardy, but somewhat irregular in the period of its ripening.

(From the Tioga Phenix.)

GIRDLING PEAR TREES.

MR. SMITH:

June 26, 1833.

Many of your readers may perhaps recollect your notice of the effect of girdling on two pear trees in my garden—the following communication from Dr. Mease, of Philadelphia, is at your service, and will doubtless be interesting to your patrons. It may be well to state that these trees were destroying (by shading and sending their roots and numerous sprouts into) a fine bed of asparagus, and not having borne any fruit, I took this method to destroy what I deemed useless and barren trees, and thereby preserve a productive and valuable part of my garden.

The trees were girdled in August, 1830, the next year both carried an unusual quantity of excellent fruit—in 1832, we had the promise of an equally abundant crop, but it was all destroyed by severe and late frosts; at the present time, one of the trees has a fine quantity of fruit, but it begins to fall rapidly, and I am inclined to believe that but few, if any, will ripen.

The leaves of the trees are uncommonly small, few in number, and presenting somewhat the appearance of having been stripped of their foliage by the caterpillar; the general appearance of both the trees is now far from flourishing, and I expect they will hardly survive another winter.

S. W. M.

Philadelphia, June 12, 1833.

JUDGE MORRIS, Wellsborough:

Sir,—About this time last year I read a statement which originally appeared in the *Tioga Phenix*, of your two pear trees having been made to bear fruit by the operation of girdling, which had been performed for the purpose of killing them, in consequence of your supposing them barren; they not having borne except slightly on two occasions. The article was headed "*Natural Curiosity*," and from the editor's remark, it would seem, that the fact was new to him. As he called for an explanation of it, and none has been furnished, I offer you one.

Although the girdling of a tree or branch to cause them to bear, may be deemed strange, it has long been familiar to those who have attended to the culti-

vation of fruit trees, and has often been done with the express view of causing seedling trees to produce prematurely, that the quality of their fruit might be tested, and in reference to their future propagation. In the first Philadelphia edition of Dr. Willich's *Domestic Encyclopedia*, article "fruit," I mentioned the process in an extract from Dr. Darwin's delightful work "*Phytologia, or the Philosophy of Agriculture and Gardening*," a work by the way which every library, and every country gentleman in particular, ought to possess, after the edition of the Bible, prepared according to the recommendation of the Rev. Dr. Watts. Considering that my edition of Dr. Willich's work was published so long since as the year 1803, that 1000 copies of it were sold, and that 1000 copies of a more recent edition by Professor Cooper were printed, it is singular that the fact in question should not have been known to some one in Tioga county, and that the theory or explanation of it has not been given. The unexpected fertility of your trees was owing to the unusual accumulation of "*proper juice*," or *cambium* in the leaves and branches, in consequence of the interruption of its downward progress by the girdling. These names are given by phytologists, to the sap when duly elaborated by the processes of vegetation, but into the consideration of which I cannot now enter. It may be enough to say, that it constitutes the grand principle of vegetable organization, generating and developing in succession the several organs of the plant, or furnishing the vital principle with the immediate materials of assimilation, and which, as proved by the experiment of Dr. Darwin, are conveyed by a set of branching vessels, originating in the extremities of the leaves, on each side of the mid rib, and ascending with it into the leafstalk, whence it is carried by the longitudinal vessels of the inner bark down to the extremities of the roots. This *cambium*, if it does not form the buds, most certainly nourishes them and causes their development. This is the true philosophy of what took place in your pear trees, and thus is the apparent mystery of the effect of girdling them, solved. I have myself tried the experiment of ringing two barren branches of a plum tree with great success. Old trees which had ceased to bear have again been rendered productive by ringing. I recollect that several years since an English periodical recorded such a case, as having occurred in the garden of Lord Drummond, in Scotland. The same effect has been observed to take place by twisting a wire or cord round a branch (which had never borne) so tight as to form a considerable protuberance above the ligation. Several years since I was told of a young fruit tree having been forced to bear, by having one end of a clothes line fastened to it in the spring, and suffered to remain for some months until the enlargement became obvious. Another mode of effecting the accumulation of the *cambium*, is to slip the neck of a porter bottle, or a hollow bone, down the limb to near its junction with the body of the tree, and to leave it there, until the branch fills the cavity, when from the obstruction to the descending juice, a circular ring of bark will form above the tube. This I saw practised by the late A. C. Du Plan, thirty years since on the Schuylkill. I am induced to believe this practice originated in France. Another mode of forcing a branch to bear, is to bend it nearly or entirely to the ground, and fixing it there by pegs, or by applying a heavy ball of clay to its extremity. The "*proper juice*" being thus diverted from its natural course, the formation of leaf buds will be retarded, and that of fruit buds promoted, even down to the lowest spur on the stem and thickest branches. The ringing of trees must be done with caution, otherwise the privation of nourishment in the roots will cause the death of the tree. The rule is to confine the operation to over luxuriant shoots of one or two years' growth, and to proportion the dimensions of the ring to the degree of softness which the roots can undergo, without material injury; or not to make the ring wider than can

be healed during the following season; the ring also should be covered to defend its edges from the weather. I wish to know whether the girdling of your pear trees has injured their health. The limbs which I ringed were cut off the year after, owing to their great length proving inconvenient where the tree grew, and I was thus unable to ascertain if they would have suffered from the operation performed on them. I am, very respectfully,

JAMES MASE.

Prices Current in New York, July 13.

Best wax, yellow, 18 a 20. Cotton, New Orleans, 14 a 16½; Upland, 13 a 16; Alabama, 13 a 16. Cotton Bagging, Hemp, yd. 13 a 21½; Flax, 11 a 15. Flour, American, 8½ a 9. Flaxseed, 7 bush. clean, 15.00 a 15.25; rough, 13 00 a ——. Flour, N. York, bbl. 5.50 a 5.62; Canal, 5 50 a 5.75; Balt. How'd st. 6.12 a 6.25; Rh'd city mills, — a —; country, 6.00 a 6.12; Alexandria, 6.00 a —; Fredericksburg, 5.87 a —; Petersburg, 5.87 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 16.50 a 17—. Grain, Wheat, North, 1.16 a 1.18; Vir. — a —; Rye, North, .75 a .75; Corn, Yel. North, .66 a .70; Barley, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Provisions, Beef, mess, 9.50 a 9.75; prime, 5.75 a 6 00; cargo, — a —; Pork, mess, bbl. 13.75 a 14.25, prime, 10.75 a 11.25; Lard, 7½ a 9.

TALL MEADOW OAT GRASS SEED.

I shall have by about the 15th of August next 200 bushels of Tall Meadow Oat Grass Seed, for sale at this Establishment. The price will be ascertained and advertised when the seed comes to hand. It is of this year's growth, and will doubtless be good, as it is saved by the same farmer who has supplied me heretofore.

I. I. HITCHCOCK,
American Farmer Establishment.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep. The stock now on hand for sale, is the following: Eight or ten EWES, of good age and quality, at prices from \$10 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address.

I. I. HITCHCOCK,
American Farmer Establishment.

DEVON CATTLE.

For sale by the Subscriber, one Devon Bull, ten months old; a handsome and promising calf. Price \$100. Also, a very beautiful and valuable Devon Heifer, two years old. Price \$175.

I. I. HITCHCOCK,
American Farmer Establishment.

TURNIP SEED.

For sale the following kinds of Turnip Seed, of the very first quality, at 75 cts. per pound.

EARLY WHITE DUTCH.

GARDEN STONE.

WHITE FLAT. GREEN ROUND.

RED ROUND OR RED TOP.

WHITE NORFOLK. WHITE TANKARD.

YELLOW ABERDEEN. RUTA BAGA.

And, as usual, a complete assortment of GARDEN SEEDS generally.

I. I. HITCHCOCK,
American Farmer Establishment.

TURNIP AND MILLET SEEDS.

J. S. EASTMAN has in store prime fresh large White, Flat, and Red Top Turnip Seed, and fresh Millet Seed. Also seed Buckwheat, together with a general assortment of Garden Seeds and Harvest Tools, and Agricultural Implements generally. Also Fox & Borland's Patent Threshing Machines, with spring concaves.

July 12.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, nineteen months old, by Gloster, out of a first rate full bred cow. He is not above middling size, but is a very beautiful and perfect animal. Price \$250.

One full blood bull, two years old—a very fine animal. Price \$50.

One full bred Heifer, two years old, now springing, but the calf will not be valuable, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$500.

One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form; calves from two to six weeks old. They will be sold for \$50 each.

Address
I. I. HITCHCOCK,
Amer. Far. Establishment.

TURNIP SEED, BUCKWHEAT, &c.

400 lbs. White Flat and Red Top Turnip Seed.
100 lbs. Ruta Baga or Swedish do do

The above is of the present year's growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Lentil Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given.

July 13.

SINCLAIR & MOORE.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.

Ap. 26.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by
I. I. HITCHCOCK,
American Farmer Establishment.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—Considerable improvement will be noticed in the prices of flour and wheat. Howard street flour, fresh ground, from wagons, is selling at \$5 57½. The price of City mill's flour is enhanced considerably by the mixture of new with old wheat, and by its freshness. Our quotations apply to new wheat exclusively. In other articles no variation.

TORONTO.—Season's as in quality, 3.00 a 5.00; do. ground, 1.00 a 2.00;—(1) p. common, 3.00 a 5.00;—(2) p. do. 1.00 a 2.00;—(3) p. do. 1.00 a 2.00;—(4) p. do. 1.00 a 2.00;—(5) p. do. 1.00 a 2.00;—(6) p. do. 1.00 a 2.00;—(7) p. do. 1.00 a 2.00;—(8) p. do. 1.00 a 2.00;—(9) p. do. 1.00 a 2.00;—(10) p. do. 1.00 a 2.00;—(11) p. do. 1.00 a 2.00;—(12) p. do. 1.00 a 2.00;—(13) p. do. 1.00 a 2.00;—(14) p. do. 1.00 a 2.00;—(15) p. do. 1.00 a 2.00;—(16) p. do. 1.00 a 2.00;—(17) p. do. 1.00 a 2.00;—(18) p. do. 1.00 a 2.00;—(19) p. do. 1.00 a 2.00;—(20) p. do. 1.00 a 2.00;—(21) p. do. 1.00 a 2.00;—(22) p. do. 1.00 a 2.00;—(23) p. do. 1.00 a 2.00;—(24) p. do. 1.00 a 2.00;—(25) p. do. 1.00 a 2.00;—(26) p. do. 1.00 a 2.00;—(27) p. do. 1.00 a 2.00;—(28) p. do. 1.00 a 2.00;—(29) p. do. 1.00 a 2.00;—(30) p. do. 1.00 a 2.00;—(31) p. do. 1.00 a 2.00;—(32) p. do. 1.00 a 2.00;—(33) p. do. 1.00 a 2.00;—(34) p. do. 1.00 a 2.00;—(35) p. do. 1.00 a 2.00;—(36) p. do. 1.00 a 2.00;—(37) p. do. 1.00 a 2.00;—(38) p. 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THE FARMER.

BALTIMORE, FRIDAY, JULY 26, 1833.

MILCH COWS.—We are frequently asked what breed of cattle we think best for the dairy, and as we have taken no inconsiderable pains to inform ourselves on this subject, both by actual observation and obtaining the opinions of a great number of practical men, we think proper to answer the question in this way. Were we about commencing a dairy, our choice would be, without hesitation, half blood Durham Shorthorns. We should be particular in selecting those by a first rate Durham Shorthorn bull, out of some of our best common cows, and if we could procure them from the hornless or buffalo breed, so much the better. Half blood Shorthorns are almost always good milkers, and first rate butter makers, averaging, in good pasture, eight to ten pounds of butter per week. We have to support us in this opinion, the testimony of several practical and intelligent persons, who have had both full blood and half blood cow; and among these persons is a lady in Pennsylvania, whose husband owns some of the finest Durham Shorthorn stock in America. This lady superintends her dairy herself, and has witnessed the milking of the full and half blood cows for many years; she has kept their milk and cream separate, and ascertained the quantities of milk and butter yielded by both; and has thus been able to decide with scarcely the possibility of error. Her trial of both breeds has not been confined to one or two select animals—she generally has half a dozen of each, and as her husband deals largely in this kind of stock, her cows are continually changing. She also has Devon cows, and half blood cows of the same; but her preference for the dairy, is as stated above, decidedly in favor of half blood Durhams. It is true her cows run in good pasture, without which no breed can be good milkers. Where the pasture is short, without doubt, the North Devons are the best, because they do keep in good condition in pasture that Durhams would fail in.

But a word to those who wish to obtain deep milkers. Whoever would have a large quantity of milk, and that of good quality, must provide good pasture and good water. You might as well expect a good crop of corn, from a sand hill without manure and rain, as a large quantity of milk from a cow in poor pasture with bad water. And, let us remark, good water is as essential to good milk yielding as good pasture. We had a cow last summer that yielded five gallons of rich milk a day. She ran in a tolerable pasture, but there was a stream of pure spring water running through it. We also kept salt constantly within her reach. The same cow this summer, in a much better pasture, does not yield three gallons of milk. The reason of this falling off, is, that she is supplied with water from a pump, occasionally, when her attendants conceive she wants it—not when she thinks she wants it, which is the great point. She also gets salt “as it happens.”

We have often heard of cows giving large quantities of milk, that “eat scarcely any thing,” to which we always reply—“tell that to the marines, for old sailors won’t believe you.” A cow cannot make milk out of nothing; and she can only give you milk in proportion to the quantity of good food you give her.

In giving our opinion of the best milkers, we know we render ourselves obnoxious to the criticism of those who own other breeds. There are three or four parties to this question, which may be named after the breeds of animals they prefer. They are full blood Durham shorthorns, half blood Durham shorthorns, North Devons, Alderneys, &c. The party to which we belong is indicated above.

DISSEMINATION OF TREES AND PLANTS.—The scientific and zealous American Consul at Campeachy, has just laid his countrymen and fellow citizens under

renewed obligation, by transmitting the seeds of some rare, important, and most remarkable trees, on whose properties it is useless for us to comment, as he describes them himself; and he “who runs may read.” Perhaps (but it is only conjecture) the last in order, the habi tree, has the best chance of being successfully propagated in our climate; for the huge corozo seems essentially tropical. But let us try all experiments, and some will succeed.

We are highly gratified to hear that the *Agave* America, (great Aloe,) sent by the same indefatigable gentleman, to Mr. Gordon, is planted and flourishing in the grounds belonging to the Charity Hospital. It is the only one of the species in the United States. How the sisal or diablitos, (stingless bees, literally “little devils,”) conveyed hither at the same time by Mr. PERRINE, have been disposed of, we are curious to learn. The sisal would most probably grow any where in our more southern states, and furnish cordage, &c. of uncommon tenacity and durability.

Not long since the papers informed us of an edible root being imported from Peru or Chili, more nutritive than the potato. Is it the famous *Oca*, or is it the South American *Ipis*?

Should none of these exotics be susceptible of naturalization in our soil and climate, which we are reluctant in believing, our Consul would still merit a vote of thanks from all our botanists, planters, gardeners, and statesmen, for tanning our zeal by his ardor.—*New Orleans Bulletin*.

Consulate U. S. A. Campeachy, June 15, 1833.

Sir,—I send you in the schooner *Francisca*, a bag containing the fruits of three kinds of trees, which have here the names of pich, corozo, and habi. The fruit of the pich, so singular in shape, is obtained from a beautiful shade tree, whose branches extend four to five hundred feet in circumference, which is larger than the *Adansonia digitata*, or great Boabab, hitherto asserted to be the largest or rather broadest tree in the world.” In the plantations of this Peninsula, it is a natural shed for cattle, and in the villages it is a hospitable roof for travellers, to shelter great numbers from the burning rays of a tropical sun.

The nuts called corozo grow in clusters as large as barrels, on a stout but handsome palm tree of *Tabasco*, which I believe to be the *Alfonisa oleifera* of botanists, or the American oil-bearing palm.

The four winged seeds called habi, are taken from the Leguminous trees of that name, (*Piscidia erythrina*.) whose timber is as highly prized for ship building in Yucatan, as the live oak of the United States, or the teak in the East Indies, and is therefore equally entitled to the care of our national government in its plantation at Pensacola.

All Campeachy built vessels have their timbers of *habi*, and their planks and upper works of the *cedro* of this district, and notwithstanding the enormous cost of ship building here, they are preferred on account of their great durability to the best American merchant vessels at half their price. Both are ornamental trees, which if once planted at the southern extremity of East Florida, will gradually extend up that Peninsula, and become very valuable additions to the resources of our navy.

I have the honor to be, sir, very respectfully, your obedient servant,

HENRY PERRINE.

THE LOVE OF THE UNSEASONABLE.—The absurdities of this exceedingly civilized land yield an abundant harvest to the observer; a man with a taste for them, with but a small annuity to supply his necessities, might live a most luxurious life on the follies of the capital alone. What necessity for plays or operas, or parties or races, which the ways of London open to him? But then he must have a true relish for them; he must be no cynic to sneer, but an epicure in folly, who hugs himself and chuckles with delight over a nice little piece of true absurdity. The prevalent “love of the unseasonable” is a fine exam-

ple of folly. The sight of people buying green peas in April, at four guineas a quart, and raspberries at half a crown an ounce, would be a treat for a whole evening to one who revelled in such entertainment. Bad peas in April, at a price as dear as gold, instead of fine peas in June, at the price of bread or potatoes, and that not from any eager longing, or any excessive love of the pea-flavor, but simply that people may open their eyes at table, and exclaim in their hearts, “what an amphitryon!” If chips were to be had only at the same price, they would be presented in a consommé of bank notes. A man who has green peas at his table in April, knows that thereby he is one of few; he is an exclusive *par force*, or forcing. To enjoy the same pleasure that many share, is alien to the spirit of England, and this is the principle and secret of the race of fashion in this country. The few enjoy a pleasure till the many gradually learn its source and master its approaches; it is then deserted for another. Rank and riches are forever “seeking pastures new;” when the vulgar herd rushes in, away they troop like sacred fowl. Society in England is constructed on the same principle attributed to matter, which is held together by the attraction of cohesion, and held off from a too close union by the attraction of repulsion. We are bound together in one whole of civilization, but detest fellowship; separate ourselves into small divisions, and when these divisions cannot be kept up naturally, we do it artificially; and when other means fail, resort to green peas in April. [*English Journal*].

DOMESTIC SILK.—We are glad to perceive that several persons in this section of country are turning their attention to the culture of silk—an occupation amusing and profitable, while it is not at all laborious. Some weeks ago we saw a beautiful specimen of sewing silk, manufactured in the family of Capt. Lewis Brown, of this place; and on Tuesday morning last, a gentleman called at our office and exhibited a quantity of the same article, manufactured by the lady of Mr. Robert Mills, of Bedford county. Raising silkworms and the culture of silk is attended with so little trouble and expense, that we hope it will be generally practised by the ladies, who will find it no inconsiderable source of revenue.—*Lynchburg Virg.*

FOREIGN MARKETS.

LIVERPOOL COTTON MARKET.

June 8.—We have had a spirited demand for cotton throughout the week, and a general improvement in prices of full 3-8 per lb., at which advance market closes steadily. The import this week is 31,838 bags, and the sales reach 47,270 bags, viz: 890 Sea Islands, 12½d to 23d; 90 stained do. 8d to 11d; 23,500 Boweds, 6 7 8d to 8 3-8d; 15,360 New Orleans, 7d to 9½d; 3,950 Alabama, 7 to 8½d; 3,869 Pernams, 9 to 10½d; 1,070 Bahias 8 5 8d to 9½d; 3,546 Maranhams, 8½d to 10d; 150 Para, 8½d; 90 Demararas, 9½d to 10½d; 10 Bardoos; 12d; 230 common West Indies, 6 3-8d to 8½d; 50 Smyrnas, 7d to 7½d; 170 Egyptians, 10d; and 4,810 Surats, 5 to 6½d per lb.

Extract of a Letter.—We have had a very animated demand for cotton during the week, attended with an advance to an extent rather unexpected, (say 3 8d on common quality.) The accounts from the U. S. respecting the probable deficiency in their crop, together with the general approval by the public, of the ministerial plan for renewing the charter of the Bank of England, have had an effect in giving increased confidence in cotton, while the low state of the stocks in the interior compelled the trade to come forward for large supplies. Trade in the interior gives promise of improvement; but thus far, although there is some advance on yarns, the advance on goods is rather asked than obtained. Of the sales of the week about 15,000 bales are supposed to be on speculation, (including 11,000 American) and nearly 200 for export, leaving about 30,000 for consumption.

AGRICULTURE.

(From the Farmers' Register.)

SUPPLEMENTARY CHAPTER TO

"AN ESSAY ON CALCAREOUS MANURES."

The use of calcareous earth recommended to preserve putrescent manures, and to promote cleanliness and health.

The operation of calcareous earth in enriching barren soils, has been traced, in a former part of this Essay, to the chemical power possessed by that earth of combining with putrescent matters, or with the products of their fermentation—and in that manner, preserving them from waste, for the use of the soil, and for the food of growing plants. That power was exemplified by the details of an experiment, (page 91,) in which the carcass of an animal was so acted on, and its enriching properties secured. That trial of the putrefaction of animal matter in contact with calcareous earth, was commenced with a view to results very different from those which were obtained. Darwin says that *nitrous acid* is produced in the process of fermentation, and he supposes the *nitrate of lime* to be very serviceable to vegetation.* As the nitrous acid is a gas, it must pass off into the air, under ordinary circumstances, as fast as it is formed, and be entirely lost. But as it is strongly attracted by lime, it was supposed that a cover of calcareous earth would arrest it, and form a new combination, which, if not precisely nitrate of lime, would at least be composed of the same elements, though in different proportions. To ascertain whether any such combination had taken place, when the manure was used, a handful of the marl was taken, which had been in immediate contact with the carcass, and thrown into a glass of hot water. After remaining half an hour, the fluid was poured off, filtered, and evaporated, and left a considerable proportion of a white soluble salt, (supposed eight or ten grains.) I could not ascertain its kind—but it was not deliquescent, and therefore could not have been the nitrate of lime. The spot on which the carcass lay, was so strongly impregnated by this salt, that it remained bare of vegetation for several years.

But whatever were the products of fermentation saved by this experiment, the absence of all offensive effluvia throughout the process sufficiently proved that little or nothing was lost—as every atom must be, when flesh putrefies in the open air: and I presume that a cover of equal thickness, of clay, or sand, or of any mixture of both, without calcareous earth, would have had very little effect in arresting and retaining the æriform products of putrefaction. All the circumstances of this experiment, and particularly the good effect exhibited by the manure when put to use, prove the propriety of extending a similar practice.—In the neighborhood of towns, or wherever else the carcasses of animals, or any other animal substances subject to rapid and wasteful fermentation, can be obtained in great quantity, all their enriching powers might be secured, by depositing them between layers of marl, or calcareous earth in any other form. On the borders of the Chowan, immense quantities of herrings are often used as manure, when purchasers cannot take off the myriads supplied by the seines.—A herring is buried under each corn hill, and fine crops are thus made as far as this singular mode of manuring is extended. But whatever benefits may have been thus derived, the sense of smelling, as well as the known chemical products of the process of putrefaction, make it certain that nine-tenths of all this rich manure, when so applied must be wasted in the air. If those who fortunately possess this supply of animal manure, would cause the fermentation to take place and be completed, mixed with and enclosed by

marl, in pits of suitable size, they would increase prodigiously both the amount and permanency of their acting animal manure, besides obtaining the benefit of the calcareous earth mixed with it.

But without regarding such uncommon, or abundant sources for supplying animal matter, every farmer may considerably increase his stock of putrescent manure, by using the preservative power of marl; and all the substances that might be so saved, are not only now lost to the land, but serve to contaminate the air while putrefying, and perhaps to engender diseases. The last consideration is of most importance to towns, though worthy of attention every where.—Whoever will make the trial will be surprised to find how much putrescent matter may be collected from the dwelling house, kitchen, and laundry of a family; and which if accumulated (without any calcareous earth) will soon become so offensive as to prove the necessity of putting an end to the practice. Yet it must be admitted that when all such matters are scattered about (as is usual both in town and country,) over an extended surface, the same putrefaction must ensue, and the same noxious effluvia be evolved, though not enough concentrated to be very offensive, or even always perceptible. The same amount is inhaled, but in a very diluted state, and in small, though incessantly repeated doses. But if mild calcareous earth in any form (and fossil shells present much the cheapest) is used to cover and mix with the putrescent matters so collected, they will be prevented from discharging offensive effluvia, and preserved to enrich the soil. A malignant and ever acting enemy will be converted to a friend and benefactor.

The usual dispersion and waste of such putrescent and excrementitious matters about a farm house, though a considerable loss to agriculture, may take place without being very offensive to the senses, or injurious to health. But the case is widely different in towns. There, unless great care is continually used to remove or destroy filth of every kind, it soon becomes offensive, if not pestilential. During the last summer, when that most horrible scourge of the human race, the Asiatic cholera, was desolating some of the towns of the United States, and all expected to be visited by its fatal ravages, great and unusual exertions were every where used to remove and prevent the accumulation of filth, which, if allowed to remain, it was supposed would invite the approach, and aid the effects of the pestilence. The efforts made for that purpose served to show what a vast amount of putrescent matter existed in every town, and which was so rapidly reproduced, that its complete riddance was impossible. Immense quantities of the richest manures, or materials for them, were washed away into the rivers—caustic lime was used to destroy them—and the chloride of lime to decompose the offensive products of their fermentation, when that had already occurred. All this amount of labor and expense was directed to the complete destruction of what might have given fertility to many adjacent fields, and yet served to cleanse the towns but imperfectly, and for a very short time. Yet the object in view might have been better attained by the previous adoption of the proper means for preserving these putrescent matters instead of destroying them. These means would be to mix or cover all accumulations of such matters with rich marl, (which would be the better for the purpose if its shells were in small particles,) and in such quantity as the effect would show to be sufficient. But much the greater part of the filth of a town is not, and cannot be accumulated; and from being dispersed, is the most difficult to remove, and is probably the most noxious in its usual course of fermentation. This would be guarded against by covering thickly with marl, the floor of every cellar and stable, back yard and stable lot. Every other vacant space should be lightly covered. The same course pursued on the gardens and other cultivated grounds, would be sufficiently compensated by the increased product that would be obtained; but independent of

that consideration, the manures there applied would be prevented from escaping into the air—and being wholly retained by the soil, much smaller applications would serve. The streets ought also to be sprinkled with marl, and as often as circumstances might require. The various putrescent matters usually left in the streets of a town, alone serve to make the mud scraped from them a valuable manure; for the principal part of the bulk of street mud is composed merely of the barren clay, brought in upon the wheels of wagons from the country. Such a cover of calcareous earth would be the most effectual absorbent and preserver of putrescent matter, as well as the cheapest mode of keeping a town always clean. There would be less noxious or offensive effluvia, than is generated in spite of all the ordinary means of prevention; and by scraping up and removing the marl after it had combined with and secured enough of putrescent matter, a compost would be obtained for the use of the surrounding country, so rich and so abundant, that its use would repay a large part, if not the whole of the expense incurred in its production. Probably one covering of marl for each year would serve for most yards, &c. but if required oftener, it would only prove the necessity for the operation, and show the greater value in the results. The compost that might be obtained from spaces equal to five hundred acres in a populous town, would durably enrich thrice as many acres of the adjacent country: and after twenty years of such a course, the surrounding farms might be capable of returning to the town a ten-fold increased surplus product. After the qualities and value of the manure so formed were properly estimated, it would be used for farms that would be out of the reach of all other calcareous manures. Carts bringing country produce to market might with profit carry back loads of this compost six or eight miles. The annual supply that the country might be furnished with, would produce very different effects from the putrescent and fleeting manure now obtained from the town stables. Of the little durable benefit heretofore derived from such means, the appearance of the country offers sufficient testimony. At three miles distance from some of the principal towns in Virginia, more than half the cultivated land is too poor to yield any farming profit.—The surplus grain sent to market is very inconsiderable—and the coarse hay from the wet meadows can only be sold to those who feed horses belonging to other persons.

But even if the waste and destruction of manure in towns was counted as nothing, and the preservation of health by keeping the air pure was the only object sought, still calcareous earth, as presented by rich marl, would serve the purpose far better than quick lime. It is true, that the latter substance acts powerfully in decomposing putrescent animal matter, and destroys its texture and qualities so completely, that the operation is commonly and expressively called "burning" the substances acted on. But to use a sufficient quantity of quick lime to meet and decompose all putrescent animal matters in a town, would be intolerably expensive and still more objectionable in other respects. If a cover of dry quick lime in powder was spread over all the surfaces requiring it for this purpose, the town would be unfit to live in; and the nuisance would be scarcely less, when rain had changed the suffocating dust to an adhesive mortar.—Woolen clothing, carpets, and even living flesh would be continually sustaining injury from the contact. No such objections would attend the use of mild calcareous earth: and this could be obtained probably for less than one-fifth of the cost of quick lime, supposing an equal quantity of pure calcareous matter to be obtained in each case. At this time the richest marl on James river may be obtained at merely the cost of digging, and its carriage by water, which if undertaken on a large scale, could not exceed, and probably would not equal three cents the bushel.

The putrescent animal matters that would be preserved and rendered innocuous by the general marling

*Darwin's Phytologia, pp. 210 and 224. Dublin Edition.

of the site of a town, would be mostly such as are so dispersed and imperceptible that they would otherwise be entirely lost. But all such as are usually saved in part, would be doubled in quantity and value, and deprived of their offensive and noxious qualities by being kept mixed with calcareous earth. The importance of this plan being adopted with the products of privies, &c. is still greater in town than country. The various matters so collected and combined should never be applied to the soil alone, as the salt derived from the kitchen, and the potash and soap from the laundry, might be injurious in so concentrated a form. When the pit for receiving this compound is emptied, the contents should be spread over other and weaker manure, before being applied to the field.

Towns might furnish many other kinds of rich manure, which are now lost entirely. Some of these particularly require the aid of calcareous earth to be secured from destruction by putrefaction, and others, though not putrescent, are equally wasted. The blood of slaughtered animals, and the waste and rejected articles of wool, hair, feathers, skin, horn and bones, all are manures of great richness. We not only give the flesh of dead animals to infect the air, instead of using it to fertilize the land, but their bones which might be so easily saved, are as completely thrown away. Bones are composed of phosphate of lime, and gelatinous animal matter, and when crushed, form one of the richest and most convenient manures in the world. They are shipped in quantities from the continent of Europe to be sold for manure in England. The fields of battle have been gleaned, and their shallow graves emptied for this purpose; and the bones of the ten thousand British heroes who fell on the field of Waterloo, are now performing the less glorious, but more useful purpose of producing wheat for their brothers at home.

There prevails a vulgar but useful superstition, that there is "bad luck" in throwing into the fire any thing, however small may be its amount or value, that can serve for the food of any living animal. It is a pity that the same belief does not extend to every thing that, as manure, can serve to feed growing plants—and that even the parings of nails, and clippings of beard are not used (as in China) in aid of this object. However small each particular source might be, the amount of all the manures that might be saved, and which are now wasted, would add incalculably to the usual means for fertilization. Human excrement, which is scarcely used at all in this country, is stated to be even richer than that of birds; and if all the enriching matters were preserved that are derived not only from the food, but from all the habits of man, there can be no question but that a town of ten thousand inhabitants, from those sources alone, might enrich more land than could be done from as many cattle.

The opinions here presented are principally founded on the theory of the operation of calcareous manures, as maintained in the foregoing part of this Essay; but they are also sustained to considerable extent by facts and experience. The most undeniable practical proof of one of my positions, is the power of a cover of marl to prevent the escape of all offensive effluvia from the most putrescent animal matters. Of this power I have made continued use for about eighteen months, and I know it to be more effectual than quick lime, even if the destructive action of the latter was not objectionable. Quick lime forms new combinations with putrescent substances, and in thus combining, throws off effluvia, which though different from the products of putrescent matter alone, are still disagreeable and offensive. Mild lime on the contrary absorbs and preserves every thing—or at least prevents the escape of any offensive odor being perceived. Whether putrescent vegetable matter is acted on in like manner by calcareous earth, cannot be as well tested by our senses, and therefore the proof is less satisfactory. But if it is true that calcareous earth acts by combining putrescent matters with the soil, and thus

preventing their loss, (as I have endeavored to prove in chapter viii.) it must follow that to the extent of such combination, the formation and escape of all volatile products of putrefaction will also be prevented. But it will be considered that the most important inquiry remains to be answered: Has the application of calcareous manures been found in practice decidedly beneficial to the health of the residents on the land? Long experience, and the collection and comparison of numerous facts, derived from various sources, will be required to remove all doubts from this question; and it would be presumptuous in any individual to offer as sufficient proof, the experience of only ten or twelve years on any one farm. But while admitting the insufficiency of such testimony, I assert, that so far my experience decidedly supports my position. My principal farm, until within some four or five years, was subject in a remarkable degree to the common mild autumnal diseases of our low country. Whether it is owing to marling, or other unknown causes, these bilious diseases have since become comparatively very rare. Neither does my opinion in this respect, nor the facts that have occurred on my farm, stand alone. Some other persons are equally convinced of this change on other land as well as on mine. But in most cases where I have made inquiries as to such results, nothing decisive had been observed. The hope that other persons may be induced to observe and report facts bearing on this important point, has in part caused the appearance of these crude and perhaps premature views.

Even if my opinions and reasoning should appear sound, I am aware that the practical application is not to be looked for soon; and that the scheme of using marl in towns is more likely to be met by ridicule, than to receive a serious and attentive examination. Notwithstanding this anticipation, and however hopeless of making converts either of individuals or corporations, I will offer a few concluding remarks on the most obvious objections to, and benefits of the plan. The objections will all be resolved into one—namely the expense to be encountered. The expense certainly would be considerable; but it would be amply compensated by the gains and benefits. The general use of marl as proposed for towns, would serve to insure cleanliness, and purity of the air, more than all the labors of boards of health and their scavengers, even when acting under the dread of approaching pestilence. Secondly, the putrescent manures produced in towns, by being merely preserved from waste, would be increased ten-fold in quantity and value. Thirdly, all existing nuisances and abominations of filth would be at an end, and the beautiful city of Richmond (for example) would not give offence to our nostrils, almost as often as it offers gratification to our eyes.—Lastly, the marl after being used until saturated with putrescent matter, would retain all its first value as calcareous earth, and be well worth purchasing and removing to the adjacent farms, independent of the enriching manure with which it would be loaded. If these advantages could indeed be obtained, they would be cheaply bought at any price likely to be encountered for the purpose.

(From the New England Farmer.)

WATER, ITS USE IN VEGETATION, &c.

We have been requested by a subscriber to give some remarks on the uses of water in agriculture and the means of its artificial application.

In the first place we would remark that it is not advisable to let theoretical speculations on the advantages of irrigation induce a cultivator to incur great expenses in counteracting natural deficiencies of soil, &c. Where grounds are free from perennial springs or low marshes, excess of moisture, may, with proper management, be turned to certain profit. It is not very difficult to make provision to drain off an excess of water; but where the soil is naturally too dry, moisture cannot often be supplied by art, in sufficient

quantities for agricultural purposes, but by an expense, entirely inconsistent with the economy of farming.

Perhaps the best possible mode of watering plants in most cases is to attract the requisite moisture from the atmosphere. That water exists in the atmosphere may be proved as follows:—If some of the salt called muriate of lime, that has been just heated red, be exposed to the air, even in the driest and coldest weather, it will increase in weight and become moist; and in a certain time will be converted into a fluid. If put into a retort and heated, it will yield pure water; will gradually recover its pristine state; and, if heated red, its former weight; so that it is evident, that the water united to it was derived from the air. And that it existed in the air in an invisible and elastic form, is proved by the circumstance, that if a given quantity of air be exposed to the salt, its volume and weight will diminish, provided the experiment be correctly made.

The quantity of water which exists in air as vapor, varies with the temperature. In proportion as the weather is hotter, the quantity is greater. At fifty degrees of Fahrenheit air contains about one-fiftieth of its volume of vapor; and as the specific gravity of vapor is to that of air nearly as ten to fifteen, this is about one-seventy-fifth of its weight.

At one hundred degrees, supposing that there is a free communication with water, air contains about one fourteenth part of vapor in volume, or 1-21st in weight. It is the condensation of vapor by diminution of the temperature of the atmosphere, which is probably the principal cause of the formation of the clouds, and of the fall of dew, mist, snow or hail.

Now in order to moisten the earth in a dry time we have only to obtain moisture from the air, which is a great reservoir of moisture, existing in most abundance, in the hottest weather. This moisture can only be artificially obtained by attraction or causing it to be absorbed by some other substance. It may be absorbed either by the soil, the manure, or the plants themselves for whose nourishment it is required. With regard to the power of the soil to absorb water, by what is called cohesive attraction, this depends in some measure on the division of its parts. If the earth be hard, and its particles as it were welded together, it will attract but little moisture from the air, dews, &c. and even the rains will run off without penetrating the surface. Thus a foot-path over a field in dry weather will be dryer than the untrodden soil on its borders, and the more you stir a soil, other things being equal, the less will it suffer by drought.

Sir Humphry Davy observed that "the power of the soil to absorb water by cohesive attraction depends in a great measure upon the state of division of its parts; the more divided they are, the greater is their absorbent power. The different constituent parts of soils likewise appear to act even by cohesive attraction, with different degrees of energy. Thus vegetable substances appear to be more absorbent than animal substances; animal substances more so than compounds of alumina and silica [clay and sand] and compounds of alumina and silica more absorbent than carbonates of lime and magnesia: their differences may, however, possibly depend upon the differences in their state of division and the surface exposed.

"The power of soil to absorb water from air is much connected with fertility. When this power is great, the plant is supplied with moisture in dry seasons; and the effect of evaporation in the day is supplied by the absorption of aqueous vapor from the atmosphere, by the interior parts of the soil during the day, and by both the exterior and interior during the night. The stiff clays approaching to pipe clays in their nature, which take up the greatest quantity of water when it is poured upon them in a fluid form, are not the soils which absorb most moisture from the atmosphere in dry weather. They cake and present only a small surface to the air; and the vegetation on them is generally burnt up almost as readily as on sands. The sods that are most efficient in supplying

plants with water by atmospheric absorption, are those in which there is a due mixture of sand, finely divided clay, and carbonate of lime, with some animal or vegetable matter, and which are so loose and light as to be easily permeable by the atmosphere.

From the foregoing premises, it is apparent that one mode of watering plants, is to hoe them and keep the ground in a finely pulverized state about their roots. The leaves of living plants likewise attract the water held in solution in the atmosphere. Some vegetable increase in weight from this cause, when suspended in the atmosphere and unconnected with the soil; such are the house-leek, and different species of the aloe. In very intense heats, and when the soil is dry, the life of plants seems to be preserved by the absorbent power of their leaves; and it is a beautiful circumstance in the economy of nature, that aqueous vapor is most abundant in the atmosphere when it is most needed for the purposes of life, and that when other sources of supply are cut off this is most copious.

Dr. Deane observed, "vegetables that are newly transplanted, as they have their roots more or less diminished or otherwise injured, often need watering till they have taken new root. But this should be done with caution. If a dry season follow the transplanting, let them be watered if they appear to droop, only on evenings, and in cloudy weather, and with water that has been exposed one day, at least, to the shining of the sun; not with water directly from a well, or a cold spring, as it will give a chill to the plants. Only a small quantity should be applied at once, that it may have an effect similar to that of a refreshing rain. For water applied too plentifully, sometimes washes away the finest of the mold from the roots; or makes little cavities about them which admit too much air.

"In a dry season, whole gardens sometimes need watering; and in doing it the above precautions are to be regarded. They are happy who have a piece of standing water in their garden, or a rivulet near at hand, from whence the garden may be watered without much labor."

A copious supply of water is very essential to a good kitchen garden. Loudon remarks, that "many kitchen crops are lost, or produced of very inferior quality, for want of watering. Lettuces and cabbages are often hard and stringy; turnips and radishes do not swell; onions decay, cauliflowers die off; and in general, in dry seasons, all the *crucifera* (plants whose flowers consists of four petals placed in the form of a cross) become stunted or covered with insects even in rich and deep soils. Copious waterings in the evenings, during the dry season, would produce that fulness and succulency, which we find in vegetables produced in the low countries, and in the Marsh Gardens at Paris, and in England at the beginning and latter end of the season. The vegetables brought to the London market from the Neat's houses, and other adjoining gardens where the important article of watering is much more attended to than in private country gardens, may be adduced as affording proofs of the advantage of the practice."

With regard to the quality of water used for irrigating land and watering plants there has been some disagreement, some preferring hard and others soft water. But in this as in many other cases no general rules can be laid down which do not admit of many exceptions. Sir Humphry Davy says, "when the water used in irrigation has flowed over a calcareous bed, it is generally found impregnated with carbonate of lime; (the most common cause of what is called hardness in water;) and such water tends in that respect to ameliorate a soil in proportion as any of the modifications of lime and charcoal were deficient; but where these are already in excess, water charged with a lime sediment should be withheld; while water impregnated with sand, clay, gypsum or particles of iron would be beneficial.

"Common river water generally contains a certain portion of the constituents of vegetable and animal

bodies; and after rains this portion is greater than at other times; it is habitually largest, when the source of the stream is in a cultivated country.

"In general, those waters which breed the best fish are the best fitted for watering meadows; but most of the benefits of irrigation may be derived from any kind of water, provided the soil be not already over charged with the prevailing ingredients in the deposit left by the water; and provided, on the other hand, that the matter of the soil and the matter of the deposit are not pernicious when combined. These are the general principles.—1. That waters containing ferruginous impregnations [particles of iron] tend to fertilize a calcareous soil. 2. Ferruginous waters are injurious on a soil which does not effervesce with acids, which is one of the tests of the presence of lime. 3. Calcareous waters which are known by the earthy deposit they afford when boiled, are of most use on siliceous (sandy) soils, or other soils containing no considerable portion of carbonate of lime."

(From the New York Farmer.)

ON THE CULTIVATION OF RYE.

Haverhill, Sept. 22, 1832.

To the Trustees of the Essex Agricul. Society:

Gentlemen,—Having for some years past been more than commonly successful in raising large crops of winter rye by a process of cultivation, which, I believe, is entirely new, I have been induced, by the suggestion of some gentlemen whose judgment I very much respect, to submit for your consideration a statement of the mode of culture, with the produce. And that the success of the experiment this season may not appear to be altogether accidental, it will, perhaps, be as well to communicate the result of the process for the three or four previous years.

The land on which the experiment has been conducted is situated on the Merrimack, about a mile and a half east of Haverhill bridge; and came into possession of my father in 1827. The soil is a sand, approaching to loam as it recedes from the river. Perhaps the term *plain land* (by which it usually passes) will better convey an idea of the quality of the soil. It is altogether too light for grass. The crops we find most profitable to cultivate on it are winter rye, Indian corn, potatoes, and to some extent turnips. Oats might probably be raised to advantage, were it not that the land is completely filled with the weed commonly called charlick, which renders it entirely unfit for any spring crop, excepting such as can be hoed. The crops of rye, on the neighboring soil of the same nature, vary, I believe, from seven or eight to twelve or thirteen bushels per acre, according to the cultivation, and their approximation to the river. We usually raise on land from thirteen to thirty bushels of Indian corn per acre. Potatoes are very good in quality, but the quantity is quite small; not sufficient to be profitable, were it not that the land is very easily cultivated.

In the summer of 1827, we sowed three bushels of winter rye near the river, on about two acres of land, which produced twenty-eight bushels.

In 1828, we sowed four bushels on four acres of land running the whole extent of the plain from the river. This piece was sowed in the spring with oats; but they were completely smothered with charlick, and about the middle of June, the whole crop was mowed to prevent the charlick seeding. By about the middle of August, a second crop of charlick having covered the land, it was ploughed very carefully, in order completely to bury the charlick; and then suffered to remain until the 15th of September, when we began sowing the rye in the following manner: A strip of land about twelve yards wide was ploughed very evenly, to prevent deep gutters between the furrows, and the seed immediately sown upon the furrow and harrowed in. Then another strip of the same width, and so on until the whole was finished. We found the oat stubble and charlick entirely rotted, and the land appeared as if it had been well manured, though

none had been applied to this part since it had been in our possession. The rye sprung very quick and vigorously, having evidently derived great benefit from being sown and sprouted before the moisture, supplied by the decaying vegetable matter in the soil had evaporated to any considerable extent. This crop produced one hundred and thirty-three bushels.

In 1829, the charlick was suffered to grow on the land appropriated to rye, until it had attained its growth and was in full blossom. The land was then ploughed very carefully, and the charlick completely covered in. In a short time a second crop appeared more vigorous than the first. This also was allowed to attain its growth, and then ploughed in as before. A third crop soon appeared, which of course was destroyed, when the land was again ploughed for sowing about the middle of September. This piece of land was a parallel strip running from the river, and containing two acres. Two bushels of rye were sowed. The crop presented a remarkably promising appearance, and yielded seventy-four and a half bushels.

In 1830, the land appropriated to rye included nearly all the lighter part of the soil, and owing to a pressure of business was not attended to as we could have wished. It was ploughed in the early part of the summer. But harrowing to destroy the weeds was substituted for the second ploughing. This, and the unusual blight which affected all the grain in this part of the county, led us to anticipate a small crop. It yielded, however, fifteen bushels to the acre.

The land on which the crop of rye was raised the present season had for the three or four previous years been planted with Indian corn; and owing to the extent of our tillage land, we have not been able to apply more than four or five loads of manure to the acre this season. The charlick was suffered to attain its growth as usual; and on the 18th and 19th of June, it was carefully ploughed in. The second crop was ploughed in on the 6th and 7th of August. On the 14th and 15th of September it was sowed in the usual manner, namely, a small strip of land was ploughed, and the seed sown immediately upon the furrow, and then harrowed in. Then another strip of land was ploughed, and so on until the whole was completed. One bushel per acre was sowed as usual. The seed was originally obtained from a farmer in this vicinity, and I suppose is similar to that which is generally used. We have never prepared our seed in any manner, but have directed our attention solely to the preparation of the land; and to this we attribute our success. Owing to the unusual severity of the winter, the crop was considerably winter killed, but recovered very soon in the spring, excepting in the mid-furrows. There, as the land lies very level, the water settled, and so completely destroyed the rye that they continued bare the whole season. This would of course cause some diminution in the crop: perhaps a bushel or two. The rye was reaped at the usual season, and, as the weather was favorable, immediately put into the barn. The land contained one acre and thirteen rods, and yielded *forty six bushels and three pecks. A remarkably fine sample.*

In entering a claim for your premium, I would ask your attention particularly to the process of cultivation. It is I believe entirely new, and capable of general application.

Sowing the seed immediately after the plough we consider very advantageous to the crop. The soil being then moist, causes the seed to spring immediately, and gives a forwardness and vigor to the plants which they ever after retain.

The process of ploughing in three crops of weeds before the seed is sown, very much enriches the soil. It would be altogether unnecessary to attempt to refute the notion, that by such a process nothing more is applied to the soil than was before derived from it. If one could not discover by the light which chemistry has shed upon the subject of agriculture, sufficient reasons for the contrary conclusion, observation,

one would think, would be sufficient to convince any intelligent man of the fact.

And here I would suggest, that I do not consider the experiment, as we have conducted it, quite complete. To render it more so, in the first place, in ploughing in the weeds, I would not turn a furrow after the dew had evaporated. I have no doubt but that a large portion of that fertilizing quality in the soil, which (during the summer months) is continually exhaled from the earth, is by the dew brought again within our reach, and it would be wise to avail ourselves of the opportunity of again burying it in the soil. And in the second place, I would by all means use a heavy roll after each ploughing. It would fill all the cavities left by the plough, and by pressing the soil more closely to the weeds, at once hasten their decomposition and very much retard the evaporation from the soil.

But the land is not only very much enriched by this process. There is, I conceive, no method by which it can be so effectually cleaned. Three times during the season a fresh surface is presented to the atmosphere, and each time, as the decaying vegetable matter increases in the soil, so is the exciting cause augmented to make a more vigorous effort. We have in this manner gone over nearly all our land which is infested with charlick, and the diminution of the weeds is quite sufficient to warrant the expectation, that in a few years it may be comparatively eradicated.

Very respectfully, JOHN KEELY.

The under-signed having assisted in measuring the rye, an account of which is given above, hereby certify that the quantity is as there stated, namely, forty six bushels and three pecks.

JOHN KEELY,
THOMAS E. KEELY,
SAMUEL THOMPSON.

Haverhill, Aug. 1, 1832.

I have this day measured a lot of land belonging to Mr. Keely, on which is a crop of rye, and find it to contain one acre and thirteen rods.

C. WHITE, Surveyor.

At a meeting of the Trustees of the Essex Agricultural Society, January 1, 1833, the foregoing statement having been read and examined,

Voted, That the first premium offered for the cultivation of rye be awarded to Mr. Keely.

Attest, J. W. PROCTOR, Sec'y.

(From the Newbern Spectator.)

GAMA GRASS.

The grass which passes under this name has acquired a considerable degree of celebrity, and promises to become of much importance to the agricultural interests of the southern states. I say to the interests of the southern states, because the northern and western portions of our country are already so well provided with a variety of valuable grasses suited to their climate and soils that to them the acquisition of one more can be of little importance, if indeed the one we are now considering should prove to be adapted to a northern climate. Whereas, in the alluvial portions of the southern states, I believe that neither clover, timothy, orchard grass, herd's grass, nor any other of the grasses derived from northern climates, have ever proved, or ever will prove extensively beneficial. The consequence is, that throughout this extensive and fertile portion of country no hay of any kind is made,* and the only native product relied upon as provender for horses and cattle generally, are the dried blades of Indian corn. (Zea mays.) Charleston and Savannah import northern hay, and even in the interior as high up as Columbia and Augusta you meet with it!

* Occasionally a little hay is made in the south from what is called the "crab grass," (Eleusine indica.) But this grass will grow only in cultivated soils.

During the last summer and fall, while engaged in occasional investigations of the botany of this neighborhood, I found upon the shore of the Neuse two species of grasses belonging to the genus *Tripsacum*, to wit: the *Tripsacum dactyloides*, and the *T. monostachyon*. At that time I had not seen the "Gama grass," nor any of the publications relating to it, and I therefore did not know, what I have since ascertained, that one of these species is probably the famous "Gama grass." During the last winter I saw in the possession of a gentleman in Florida, a few of the seeds of the Gama grass, which he had received from abroad, and he informed me that he had found the same grass growing native in Florida. I immediately recognised them as belonging to one of the species of *Tripsacum*, apparently the *T. monostachyon*; but I was held in some doubt on account of a third species of this genus, mentioned and described by Michaux, in his North American Flora, under the title of *Tripsacum cylindricum*, and found by him in Florida. This species, like the *T. monostachyon* has cylindrical spikes, while the *T. dactyloides* has them flattened on one side, and rounded on the other, but differing from both in the circumstance of having its flowers "hermaphrodite." On looking into Loudon's "Encyclopedia of Plants" I found mentioned a species growing in the West Indies under the title of *Tripsacum hermaphroditum*, which I could scarcely doubt to be identical with the *T. cylindricum* of Michaux having hermaphrodite flowers, a species which Elliott suspects to belong to the genus *Rotbolla*, and which Nuttall, probably from its ambiguous character, has not mentioned at all. But the Encyclopedia of Plants further remarks upon the genus *Tripsacum*, that they are grasses, used for provender in the West India islands, an expression somewhat loose, as only one species of the genus is said to grow in the West Indies, but indicating the opinion of the writer that all the species might be employed for that purpose. And to this conclusion I have been led by my subsequent inquiries of those who have cultivated the grass. For one gentleman assures me that the grass which he cultivates as the Gama grass has the spikes aggregated, and is, therefore, the *Tripsacum dactyloides*; another that the spikes of his grass are cylindrical and solitary, and is therefore, the *T. monostachyon*, it indeed, it be not the *T. cylindricum* of Michaux. I left Florida before the grass there cultivated had evolved its spikes, and therefore, could not ascertain to which of the species it belonged, though it must be to one of the last two.—Which of the three species is the true *Samon Pure*, I will not undertake to determine, but my conclusion is that all of them may be employed with almost equal benefit. Perhaps the two last species may be less rough than the first, and I apprehend, that if the grass be not frequently cut, it becomes too rough, and will be refused by horses, if not by black cattle. But the great value of the grass is, that it grows with great rapidity and luxuriance even in the sandy soils of the south, if moderately rich, and bears cutting, it is said, every month during the summer and fall. The published accounts say, that it will yield from seventy five to ninety tons the acre; and I learn from a gentleman who cultivates it, (W. B. Meares, Esq. of Wilmington,) that it does well both in sandy and clay soils. It appears that one of the species is found native in Florida, and the West India islands, and the two others along the Atlantic coast from the Delaware river to South Carolina, and probably to Florida, and also, "in the vast prairies of the western states," as Mr. Nuttall informs us. It is, therefore, probable that this is one of the few valuable grasses that adapt themselves to every climate and every soil.

Those among us who wish to obtain it, have only to search for it during the ensuing fall along our river shores. If they have once seen and observed the seeds of one of the species they will be in no danger of mistaking the plant, for it has a decided character.

H. B. C.

HORTICULTURE.

(From the Southern Agriculturist.)

ON THE DURATION OF VITALITY IN GARDEN SEED.

Rocky Grove, Abbeville District, March 19, 1833.

Dear Sir,—I send you a few extracts from my note book on gardening, which you can use as you think proper.

Question—How many years old will Carolina grown seeds vegetate in Carolina?

Answer—Cabbage, 2 years—not one the third year; two experiments.

Civie Beans,	2 years,	do.	do.
Musk Melon,	4 years, not one	the fifth year.	
Cucumbers,	4 years,	do.	do.*
Water Melons,	4 years, not tried	further.	
Pumpkins,	4 years,	do.	
Squashes,	3 years,	do.	
Snap Beans,	2 years,	do.†	
Carrots,	2 years,	do.‡	
Okra,	3 years,	do.	
Tomatoes,	3 years,	do.	
Turnip,	5 years,	do.	
Radish,	3 years,	do.	
Onions,	2 years,	do.	
Lettuce,	3 years,	do.	
Endive,	3 years,	do.	
English Peas,	2 years,	do.	
Water Cresses,	2 years,	do.	

I have observed a difference of ten days in sprouting, between old and new seed in favor of the latter; the old seed sometimes takes fifteen days to vegetate. Respectfully, THOMAS PARKER.

(From the London Morning Chronicle, May 28.)

LONDON HORTICULTURAL SOCIETY.

On Saturday, the spring exhibition of flowers and fruits took place at the Gardens of the Society, near Turnham green. This exhibition is not on the same plan as the fetes which have formerly been held in these grounds, but is simply what it professes to be, an exhibition of choice flowers and fruits, but on a more appropriate spot than that in which similar exhibitions were heretofore held, viz: the rooms of the society. A military band, however together with the performances of the Tyrolese Minstrels, were an agreeable addition to the entertainment, whilst, for the convenience of those who wished to gratify other senses than those of sight and hearing, refreshments of a suitable kind were provided.

The weather was particularly auspicious, and the grounds, which are very extensive, and are laid out with considerable taste, afforded a really delightful promenade. The various rare and beautiful plants with which they abound, appear to be in that flourishing condition which can alone result from skill and constant attention. We may, however, be pardoned if we hint our regret at the absence of many of those beautiful productions of Flora which are our more

* Cucumber seed, five years old, planted in a common garden soil—not one came up—planted in a dung hill, and watered morning and evening, came up perfectly well on the fifth day.

† In filling up the cracks of a log-house with clay in this neighborhood, a small bag of snap beans was accidentally enclosed between two logs in the clay. This clay was removed fifteen or twenty years after, when the bag of beans being discovered, they were planted by way of experiment, and the greater part of them vegetated.

‡ Three small beds of carrots sowed by way of experiment in June. Bed No. 1, was watered in the evenings and afforded a fair crop of carrots. Bed No. 2, watered morning and evening—scalded by the sun and destroyed. Bed No. 3, watered morning, noon and evening—these advanced in growth rapidly ahead of No. 1, and were remarkably large and fine.

familiar acquaintances. These might be interspersed with great effect, and would break that somewhat formal appearance which strikes the eye of the otherwise well pleased spectator. To admire only what is rare and costly, and to despise that which is really beautiful, because it is common and easy of attainment, is the mark of a vitiated taste—a taste in the gratification of which there is but little real pleasure, and which can only be compared to the sickly enjoyments of the epicure, who stimulates his jaded appetite with rich sauces till he loses all relish for the plain wholesome food essential to health. Let us not be misunderstood. We are far from disapproving of the cultivation of exotics. To obtain by art what nature has denied—to overcome the inaptitude of our soil, or the uncongenial temperature of our atmosphere—to collect within one small circle the various gifts of Flora to various nations and various climes—is an employment of wealth, both honorable and useful, and affords an innocent and delightful recreation, calculated to refine the taste, purify the affections and enlarge the understanding. It is, indeed, no small pleasure to behold the rich trees and flowering shrubs of brighter skies and more genial climates mingled with the equally, though differently, beautiful productions of the frozen regions, and to see them, not sighing like drooping exiles for their home, but strong, healthy, and vigorous—their native hues unfaded, and their native fragrance undiminished.

The exhibition of Saturday was, on the whole, one of the best we have seen, and considerable improvement was to be discovered in several of the new varieties. To particularize, where all was excellent, might appear invidious; but we cannot help referring to a few specimens by which we were particularly attracted—Smith's Noisette rose, exhibited by Colley and Hill, was especially admired. The same tribute was also paid to some very fine specimens of *Calceolaria*—the *Calceolaria suberecta*, of Mr. Lowe, and the *Calceolaria corymbosa hybrida*, of Mr. J. H. Palmer, as well as to Mr. Buck's pinks. The various specimens of *Cactus* were uncommonly fine. *Ericas*, *azaleas*, *rhododendrons*, *geraniums*, *roses* and *heartsease* were to be found in every variety, and in most beautiful condition; but in the tulips we were disappointed. It is, however, but justice to say, that had the exhibition taken place a fortnight sooner, there probably would have been no reason to complain on this head. Specimens of fruit, of course, could not be expected to great abundance, yet there were strawberries, (Keen's seedlings, and very fine,) raspberries, grapes, melons, one peach, and forty-eight apricots, forced without fire, by Mr. Labouchere.

The great silver medal was awarded to J. H. Palmer, Esq. and Banksian medals to Messrs. Brown, J. Lee, Colley and Hill, Chandler & Son, G. Mills, Labouchere, Water and Colvill. The gardens were filled with beautiful and elegantly dressed ladies, and many persons of high rank and fashion were present.

The decided success of this mode of exhibiting will, doubtless, ensure its repetition. We shall be glad of the occasion to repeat our visit, trusting, however, that our gratification will be shared with a yet larger number of visitors than on the present occasion, and will be increased by more extended views of the benefits likely to result from the society's exertions.

RHUBARB PIE.—The Rhubarb root, which makes such rich and delicious pies, will grow doubly well by placing an empty barrel over it. A friend of ours had two plants by the side of each other. To test the fact, he placed a barrel over one, and left the other uncovered. At the expiration of a fortnight, the covered one had extended itself beyond the top of the barrel, while the other by its side had grown, perceptibly, but very little. One plant served in this manner, will supply the largest family with materials for delicious Rhubarb pies.

[Northampton Courier.]

RURAL ECONOMY.

(From the Columbia Telescope.)

CURE FOR THE BITE OF THE RATTLESNAKE.

We have been politely favored with the following correspondence, which we are glad to be the means of making public. The name of the gentleman who has been instrumental in bringing the plant alluded to, to the knowledge of the faculty, is suppressed in obedience to his own feelings of delicacy on the subject—but we can assure the public that there is no man in the world upon whose veracity more implicit reliance may be placed.

Columbia, Aug. 28, 1829.

Dear Sir,—The plant you was so obliging as to send me in the box came at a propitious season (being now in blossom) for ascertaining with precision what plant it is. It is the plant known among botanists by the name of the *Asclepias verticillata*, and belongs to the same family of plants with the well known butterfly weed, or pleurisy root, with yellow blossoms, common in our fields and known to the botanists, by the name of *Asclepias decumbens*.

The *Asclepias* is an extensive family of plants, many of which have long been recognized as medicinal. This fact together with the strongly marked instances of its efficacy in the bites of snakes, which have happened within your immediate observation, seem to me to entitle it to more consideration, and to render it deserving of farther attention on trial than the reputed remedies of this sort generally.

It might probably, therefore, be subserving the cause of humanity, if you would be so good as to make a detailed, but brief statement of the facts in your possession, and I will endeavor to draw attention towards the subject by procuring its publication in the papers. As this is a dangerous season of the year for the bites of snakes, the remedy by being made public may be speedily tested; and if really equal to its apparent powers in the cases witnessed by yourself, it may mitigate much suffering and save some lives.

I anticipate your unwillingness to having your name in the papers on slight occasions, and therefore, if you think proper, it shall not appear. It will be enough to invite public attention to the remedy, and then let it stand or fall according to its own merits.

Very respectfully, dear sir, yours,

JAMES DAVIS.

DR. JAMES DAVIS.

September 4, 1829.

Dear Sir,—Yours of the 28th ult. I have received, requesting a brief statement of the cases which I have witnessed of the efficacy of the plant which I sent you, in curing the bite of the rattlesnake.

About ten years ago my son was bitten on the instep, by a ground rattlesnake, about dark on Friday night, and every remedy which I then knew, such as hart-horn, camphorated spirits, oil, &c. was applied without effect.—He continued to grow worse, and on Saturday night, his leg was so swollen, that the skin burst in three places, on the calf of his leg, near the knee; and mortification, as far as I could judge, appeared to have commenced.—At this time a friend of mine, by whom this plant was known, called, and advised me to try it. I did so, and found that it gave him immediate relief. In a few hours, he was perfectly well, except the ulcers on his leg: they were afterwards attended to and dressed as common ulcers, and healed as speedily as any sores I had ever witnessed.

A year or two afterwards, a negro boy was bitten, by one of the same kind of snakes, on the foot. I procured the plant the same day, and administered to him, not however before the foot and leg were greatly swollen. He was, also, instantly relieved, and next morning went to his work with the rest of the negroes, perfectly well; though his foot and leg remain-

ed swelled for several days. He never complained of any pain or inconvenience from the snake bite afterwards.

A third case happened a few years since.—My daughter, a child, then about six years old, was bitten by one of the same kind of rattlesnakes, on the finger. In this instance, the application was made within two hours after the wound was inflicted. Her hand, at the time she took the medicine, was prodigiously swelled; it was nearly as round as her arm, and she was screaming with pain. On taking the tea, she became easy, and within fifteen minutes was fast asleep and awoke perfectly restored; and before the next morning the swelling had entirely abated.

A tea is made of the plant, root and top, and given to the patient, in broken doses, until it vomits him; he then goes to sleep, sweats profusely, and awakes quite well; at least this has been the effect in each of the above stated cases. I have never used more than a dozen plants in any one case. Yours, &c.

MISCELLANEOUS.

(For the American Farmer.)

REMARKS MADE ON READING BARON CUVIER'S "ANIMAL KINGDOM."

In an introductory discourse, delivered before the Literary and Philosophical Society of New York, the late Governor CLINTON, speaks of "the fanciful system of the Arabian metaphysicians, adopted by Pope, in his Essay on Man:

"From Nature's chain whatever link you strike,
Tenth, or ten thousandth, breaks the chain alike."

And he adds: "this doctrine of a *chain of being* is equally a superstition of philosophy, and a dream of poetry. Many links have been broken in this imaginary chain, many species have been destroyed, and yet the harmony of nature has not been disturbed."

On this subject, CUVIER remarks: "The pretended chain of beings, as applied to the whole creation, is but an erroneous application of those particular observations, which are only true when confined to the limits within which they were made. It has, in my opinion, proved more detrimental to the progress of Natural History in modern times, than it is easy to imagine." McMurtrie's Translation, vol. i. p. 17.

"*Sciurus volucella*.—(The American flying squirrel.) It lives in troops in the prairies of North America." Vol. i. p. 137.

This is doubtless a mistake. In a prairie, the flying squirrel would be in a helpless condition. It has no wings to rise with. Its membranes, like the rudder of a ship, can impart no motion. It is only when it is in motion, that these, like a rudder, by pressing against the air through which it passes, retards its descent and guides it on its course. It would, therefore, avoid the prairies as long as it retained a sense of its own faculties; and it is wonderful how well every animal understands its own powers, and the situation for which nature designed it.

But it is not from reasoning alone that I infer this mistake. I have only seen the flying squirrel in the woods, having often very unintentionally ejected him from his hollow tree, when we have been cutting timber. Instead of a "troop," I have never seen more than what I supposed to belong to one nest. As soon as they recover from the concussion, they run up the first tree that they come to, and often from a height of seventy or eighty feet, launch into the air, through which they rapidly glide, towards another tree, assuming as the velocity increases a more horizontal direction.

Since writing the above, I find that Dr. Godman, in his "American Natural History," says: "Their peculiar construction and habit render them very unfit for living on the ground;" and consequently unfit for inhabiting prairies. He adds, "occasionally large troops are seen together, and their sailing

leaps have been said present to the inexperienced the appearance of a large number of leaves blown off the trees." It is to be inferred from this expression that Dr. Goldman himself never saw them on those sailing excursions. It would be very strange indeed, if he had; for the flying squirrel is a nocturnal animal, only travelling in the day-time, like the owl, when he can do no better. I am a woodsman, and have associated with old hunters for years, yet I have neither seen nor heard of such a "troop."

"*Chrysochloris asiaticus*.—(The golden mole.)—Is the only known quadruped that presents any appearance of those splendid metallic tints that adorn so many birds, fishes, and insects. Its fur is a green changing to a copper or bronze." P. 89.

"*Mus rattus*.—(The black rat.) of which no mention is made by the ancients, and which appears to have entered Europe in the middle centuries." P. 143.

"*Mus decumanus*.—(The Norway or brown rat.) which did not pass into Europe till the eighteenth century; and is now more common in large cities than the black rat itself. It is larger than the latter by one-fourth, and differs from it also by its reddish brown hair.

"It appears to belong to Persia, where it lives in burrows. It was not till the year 1727, that after an earthquake, it arrived at Astracan by swimming across the Volga."

It is truly wonderful that those animals kept quiet ever since the flood, till that period; and that then they should overrun the world in the course of one century; on such subjects, however, we have no higher authority than Baron Cuvier.

I have heard old people say, that black rats were common till the Norway rats arrived and dispossessed them.

AN AMERICAN FARMER.

(From the New York Farmer.)

CLIMATE, PRODUCTIONS, &c. OF COLOMBIA.

The following extracts from a letter from a highly respectable and intelligent gentleman, long a resident in Colombia, will be read with interest. The means of knowing and observing the condition of the country were open to the writer in an unusual degree, and the accuracy of his statements may be relied upon.

The population here is mixed; there are all colors, and all shades of colors, to be found; there is the pure white Castilian, the pure Indian, the pure African, and every hue that could result from an amalgamation of the three. The people are naturally very talented and very amiable, and of fine manners, the ladies particularly; and they are besides very beautiful, which I can say without offending any of my own charming countrywomen—for when I choose to compliment a lady here, I tell her that I consider her worthy of being a North American. I could say nothing, as I conceive, more flattering. They are besides almost all patriots, of much decision and energy of character; and the successful issue of the Revolution, and of the subsequent redemption of the country from the usurpation of Urdaneta, may be in no small degree imputed to the women of Colombia. They never despaired of the Republic; they suffered every thing that the remorseless cruelty of the Spaniards could inflict. But they suffered with the firmness of the Spartan matrons, and have even gone to the scaffold unshrinking and undismayed, repeating to the last that magic and hallowed word, *libertad, libertad*, (liberty, liberty.) Such are the women of Colombia. Good wives, good mothers, and good republicans,—if they have vices, they are redeemed by many virtues; and let it be recollected, as a potent apology for them, that they are heirs to the bad effects of the three hundred years' continuance of bad institutions, and that they have been parties and victims to a fierce and sanguinary conflict of twenty-two or twenty-three years, and that they are the children of a tropical climate.

In this country there is nothing more striking than

the astonishing variety of soil and climate and productions. The soil is very excellent in many parts, and adapted to the cultivation of every thing that grows. Three crops of corn may be gathered in the course of the year from the same ground in many places. The people cultivate sugar cane, cotton, coffee, cocoa, indigo, tobacco, a variety of grains, wheat, barley, rice, &c. &c., garden vegetables, and an almost infinite variety of delicious fruits. The state of agriculture is in a most lamentable and languishing condition, as you may infer from one fact amongst many. In the neighborhood of this place there is an abundance of wheat land; yet it is no uncommon thing to see very indifferent flour selling at the rate of thirty-five to forty dollars the barrel, and I will add, that I have seen Irish potatoes selling at three dollars the bushel; that was, however, when the city was besieged, and the supplies partially cut off, but still they are always extravagantly dear, although they are grown in almost all parts of this country, and are much superior to those of the United States.

As there are no seasons here excepting the wet and dry, the wet called the winter and the dry the summer, the productions of the soil are regulated by the climates. In what they call the cold climate, perhaps, from eight to twelve or thirteen thousand feet above the level of the sea, they grow wheat and other small grain, potatoes, aracachas, &c. &c. Corn does not do well. In the plain of Bogota, the elevation of which is about nine thousand feet, it requires nine or ten months for it to ripen. There the mercury in Fahrenheit's thermometer ranges, in the shade, from fifty to sixty-five; generally it is from fifty-six to sixty-two, or thereabouts. In the sun it is sometimes very warm; but flannel is worn throughout the year by all foreigners, and by many of the natives.

In what is called the temperate climates, with an elevation of four or five thousand feet above the sea, they grow cotton, sugar-cane, corn, potatoes, and various fruits. In those climates it is from twelve to fifteen degrees warmer than the cold. The next is the warm climate, but little elevated above the sea, where it is always excessively warm. The productions belonging to those climates are cocoa, coffee, cotton, sugar-cane, indigo, corn, with a few garden vegetables, and many kinds of fruit.

The facility of changing climate here surprises a North American at first. In the United States there can be no very decisive change without going to Mexico; a voyage or journey of some two or three thousand miles. Here you may leave in the morning a point, say twelve or thirteen thousand feet above the sea, where it will be equal to our worst March weather; at twelve you may be in a climate where the temperature is about equal to our May weather; and you may sleep at night in a climate equal to that of New Orleans, in its utmost fervor. This diversity of climate is a great convenience to the sick and to the valetudinarian. There are many delightful baths too, mineral and chalybeate, warm and tepid, which are very beneficial.

There are so many kinds of fruit, that it would require a sheet to enumerate them. The principal are oranges, pine-apples, cambres, grenadillas, which are very fine. There is also a fruit called the *chirimaya*,* which is designated here the queen of fruits, and which Humboldt says is worth a trip to this country to eat. All these, and many more, are very cheap. Apples and peaches they have too, but they are scarcely considered eatable by a North American. The art of engrafting and inoculating is but little understood and less practised, and without these there can be no good apples. The quantity of fruit and the cheapness of sugar lead to the custom, I presume, of making enormous quantities of sweetmeats, which

* *Chirimaya*, is the *Anona cherimolia*, v. *tripetala*, of botanists. The Editor of the American Farmer, has a fine plant of it, a present from Wm. Prince & Sons, of Flushing. It is a tender hot-house plant.—Ed. Amer. Farmer.

constitute a part of every meal, and in my judgment do much mischief.

Manual labor is but little relieved here by mechanism. There are but few labor-saving machines of any kind in the country, not even a cotton gin (or not more than one) or spinning jenny. The people are not fond of innovations, and are particularly hostile to those that might happen to interfere with their usual and hereditary occupations.

What I have written will serve to give you a slight knowledge of this country, of which it has been justly said, "God has done much for it, and man very little."

(From the New York Farmer.)

AGRICULTURE OF YUCATAN—TROPICAL PLANTS.

Consulate U. S. A. Campeche, May 25, 1833.

Sir,—I intended to fill this sheet with information concerning the simple agriculture of Yucatan, which, I have before stated, employs neither plough nor harrow, nor spade, nor rake, but as I have given a letter of introduction to the Senor Leal, a native cultivator of this peninsula, you will be able to acquire from him the few details relative to corn and cotton, cassava and the cane. By the by, according to Bernal Dean, the very name of Yucatan consists of two Maya words, which signify cassava field. Notwithstanding the apparent sterility of its rocky surfaces, it already produces sugar for exportation, although the first stalk of Otahentan cane was introduced only fifteen years ago. Indeed in the delicious climates of the tropics, vegetables seem to need scarcely any nourishment direct from the soil, and either ignorance or cowardice must have represented them as hostile to the health of the human race. As the South Carolina disturbance has prevented the passage of the bill reported in favor of my enterprise for domesticating tropical plants in the equally delightful atmosphere of Cape Florida, I most content myself here with the promise of J. Dubose, to receive and take care of the seeds and plants of which I have already forwarded to him there a great variety. The two greatest blessings of God to man, the plantain or Banana plant and the cocoa palm, are already flourishing at the Cape, with the orange and the lime. This summer will probably add to them the most productive farinaceous root on earth, the Jalsopher manhot, of which they extract in this peninsula the finest starch at the rate of two thousand five hundred to four thousand pounds the acre, which sells on the land where it is produced at less than two cents the pound, and in this city, with the costs of long land transportation, at three dollars and a half the one hundred pounds.—Add to this the fine flour which is produced in abundance by the mild root of the *Maranta arundinacea*, and sold in our apothecary shops as a luxury for the sick, under the name of arrow root, but which may be as well made a cheap subsistence for the well.—But I have not time even to sketch the outlines of the value of the various tropical plants which I have already forwarded, and which I trust in God will arrive in safety. Should a single vegetable of each species arrive at maturity at the Cape, I shall have conquered the most formidable obstacles to the complete success of my enterprise of domesticating tropical plants in the United States, by gradual acclimation.

Who dare assert that the Canary plantain will not extend to the Potomac?

Very respectfully, your obedient servant,

H. PERRINE.

FECUNDITY OF SHEEP.—Mr. E. P. Player, of Truro, has 10 ewes which brought forth in 1831, 21 lambs; in 1832, they had nine double births and one treble birth, making also 21; and in the present year, they have had 8 double births, one treble, and one single birth, making 20; in all 62 lambs from 10 ewes, in three years.—Falmouth (Eng.) Packet.

Prices Current in New York, July 20.

Beeswax, yellow, 18 a 20. **Cotton**, New Orleans, .14 a 16 $\frac{1}{2}$; Upland, .13 a .16; Alabama, .13 a .16. **Cotton Bagging**, Hemp, yd. .13 a .21 $\frac{1}{2}$; Flax, .11 a .15. **Flax**, American, 8 $\frac{1}{2}$ a 9. **Flaxseed**, 7 bush. clean, 15.00 a 15.25; rough, 13 00 a —. **Flour**, N. York, hbl. 5.50 a 5.62; Canal, 5.50 a 5.87; Balt. How'd st. 6.12 a 6.25; Rh'd city mills, — a —; country, 6.00 a 6.12; Alexand'a, 6.00 a —; Frederick-burg, 5.87 a —; Petersburg, 5.87 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 17.00 a —. **Grain**, Wheat, North, 1.18 a —; Vir. — a —; Rye, North, .80 a —; Corn, Yel. North, .74 a .75. **Barley**, — a —; Oats, South and North, .38 a 40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; **Provisions**, Beef, mess, 10.25 a 10.50; prime, 6 00 a 6.25; cargo, — a —; Pork, mess, bbl. 14.25 a 15.00, prime, 11.25 a 11.75; Lard, .7 $\frac{1}{2}$ a .9.

TALL MEADOW OAT GRASS SEED.

Just received at the American Farmer Establishment, 100 bushels Tall Meadow Oat Grass Seed, of first quality, just harvested and for sale, at \$2 50 per bushel, by
I. I. HITCHCOCK.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep. The stock now on hand for sale, is the following:
Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address.
I. I. HITCHCOCK,
American Farmer Establishment.

DEVON CATTLE.

For sale by the Subscriber, one Devon Bull, ten months old; a handsome and promising calf. Price \$100. Also, a very beautiful and valuable Devon Heifer, two years old. Price \$175.

I. I. HITCHCOCK,
American Farmer Establishment.

TURNIP AND MILET SEEDS.

J. S. EASTMAN has in store prime fresh large White, Flat, and Red Top Turnip Seed, and fresh Milet Seed. Also seed Buckwheat, together with a general assortment of Garden Seeds and Harvest Tools, and Agricultural Implements generally. Also Fox & Borland's Patent Threshing Machines, with spring concaves.
July 12.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, nineteen months old, by Gloster, out of a first rate full bred cow. He is not above middling size, but is a very beautiful and perfect animal. Price \$250.

One full blood bull, two years old—a very fine animal. Price \$250.

One full bred Heifer, two years old, now springing, but the calf will not be valuable, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, fifteen months old from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form; calves from two to six weeks old. They will be sold for \$50 each.
Address
I. I. HITCHCOCK,
Amer. Far. Establishment.

TURNIP SEED.

For sale the following kinds of Turnip Seed, of the very first quality, at 75 cts per pound.

EARLY WHITE DUTCH.**GARDEN STONE.****WHITE FLAT. GREEN ROUND.****RED ROUND OR RED TOP.****WHITE NORFOLK. WHITE TANKARD.****YELLOW ABERDEEN. RUTA BAGA.**

And, as usual, a complete assortment of GARDEN SEEDS generally.

I. I. HITCHCOCK,

American Farmer Establishment.

HERBEMONT ON THE VINE AND WINE MAKING

Just published and for sale at the American Farmer Office and Seed Store, "A Treatise on the Culture of the Vine and on Wine Making in the United States. By N. Herbemont, of Columbia, S. C. Accompanied by remarks by the Editor of the American Farmer." Price, 25 cents

**TURNIP SEED, BUCKWHEAT, &c.**

400 lbs. White Flat and Red Top Turnip Seed.

100 lbs. Ruta Baga or Swedish do do

The above is of the present years' growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Locust Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given.

July 13.

SINCLAIR & MOORE.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street.
Ap. 26.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by
I. I. HITCHCOCK,
American Farmer Establishment.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET—The flour and grain market continues to improve, as will be seen by our quotations. It must be borne in mind that our quotations of flour refer to fresh ground, and that the city mill's flour, quoted at \$6 50, contains a portion of new wheat. The wagon price of Howard street flour is \$5.87 $\frac{1}{2}$.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15 00; yellow and red, 9.00 a 15 00; yellow, 16 00 a 20 00.—Fine yellow, 18.00 a 25 00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3 50 a 5.00. The inspections of the week comprise 444 hlds. Md.; 57 hlds. Ohio; and 2 hlds. Penn.—total 503 hlds.

FLOUR—best white wheat family \$6.75 a 7.25; super; Howard-street, 6.00 a 6 1 $\frac{1}{2}$; city mills, 6.00 a 6.50; city mills extra 6.50 a —;—CORN MEAL bbl 3 62 $\frac{1}{2}$;—GRAIN, new red wheat, 1.20 a 1.28; white do 1.30 a 1.40 —;—CORN, white, 60 a 62, yellow, 63 a 64;—RYE, 69 a 70 —OATS, 28 a 31.—BEANS, 75 a 80—PEAS, 65 a 70—CLOVER-SEED 5.00 a —.—TIMOTHY 3.00 a —.—ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.25 a 2.50.—Herds', 1.00 a —.—Lucerne — a 37 $\frac{1}{2}$ lb.—BARLEY,—FLAXSEED 1.37 a 1.50—COTTON Va. 12 a 13 $\frac{1}{2}$ —Lou. 14 a 15—Alab. 12 a 13 $\frac{1}{2}$ —Tenn. 12 a 13; N. Car. — a —; Upland 13 a 14 $\frac{1}{2}$ —WHEAT hlds. 1st .28 a;—in bbls. 30 a 32—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 35 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russia, ton, \$180 a 190; Country dew-rotted, 6 a 7c lb. water-rotted 7 a 8c.—Feathers, 37 a 37 $\frac{1}{2}$ —Plaster Paris, per ton, 4.25 a;—ground 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5 75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4 00 a 4.50; Pine, 2.00.

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Editorial; Milch Cows—Dissemination of Trees and Plants, by Henry Perrine, Esq.—The Love of the Unseasonable—Domestic Silk—Foreign Markets—Supplementary Chapter to "An Essay on Calcareous Manures;" The use of Calcareous Earth recommended to preserve Putrescent Manures and to promote Cleanliness and Health—Water, its Uses in Vegetation, &c.—On the Cultivation of Rye—Account of the Gama Grass and its Culture in the South recommended—On the Duration of Vitality in Garden Seed—Exhibition of the London Horticultural Society—Rhubarb for Tarts—Cure for the Bite of the Rattlesnake—Remarks on Reading Baron Cuvier's "Animal Kingdom"—Climate, Productions, &c. of Colombia—Agriculture of Yucatan; Tropical Plants—Fecundity of Sheep—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL**Agricultural and Horticultural Establishment:****CONFIRMING.**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

☞ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

☞ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, AUGUST 2, 1833.

THE MOON.—It has been a question with us whether a periodical would not be as usefully employed in dissipating error as in disseminating information.—As it respects the influence of the moon on the weather, on crops, &c. we have no doubt that the general belief in it has done as much harm to the agricultural interest, as any other evil with which farmers and planters have to contend. How often do farmers omit a favorable season to plant a crop of potatoes, &c. because it is "not the right time of the moon." Many people will not kill hogs or beef, unless at a particular time of the moon. And when the "right time of the moon" does come, it is at least an equal chance that the state of the weather will not admit of these operations, or some other more necessary business must be performed, and of course they must be put off till the moon comes round again to the proper "time." Almost every body can tell what weather we are to have for the next four weeks, by looking at the new moon, and lay out their work accordingly. If the horns of the new moon are perpendicular, they say we are to have a wet moon, and at haying and harvest time, many a good crop is saved by the prompt advantage taken of every clear day; because, they say, we shall have very few such days this moon. This, to be sure, is a very useful error; but its opposite more than balances the account. When the new moon shows her horns in a horizontal position, somewhat like a section of a bowl slightly inclined upon its side, then they say we shall have a dry moon, and the hay and the crops are neglected, because "we shall have plenty of dry weather this moon." Now there is no "old saw" more useful to farmers, than the good old adage—"make hay while the sun shines;" which means, do whatever you have to do, and can do, to to-day, and let the moon mind her own business, as you may be sure she is inclined to, if you will only let her alone—she cares no more for your potatoes and pork, and exercises no more influence over your operations "than the man in the moon."

On this subject M. Arago, of Paris, has written a most excellent treatise, an abstract from which we publish in the present number of the American Farmer, copied from the Foreign Quarterly Review. We request our readers to give the article a careful perusal, after which, if they have anything to do, over which they formerly supposed the moon exercised an influence, they may safely trust their own judgment in deciding whether they shall wait any longer for the "right time of the moon."

AGRICULTURAL SCHOOL.—Can any body inform us where there is an agricultural school? If a detailed description of the school, with its terms, &c. be added, the obligation of the inquirer, would be enhanced. Address the publisher of this paper.

TALLAVERA WHEAT.

MR. SMITH: *Linganore, July, 1833.*

Dear Sir,—Through the medium of your excellent Farmer, I deem it advantageous to your numerous patrons, and to the agricultural community, to offer for sale a quantity of seed wheat, known to us as the "Tallavera white wheat," which was first introduced into our county about twelve years ago as an "imported spring wheat," and as such failed; but fortunately a small quantity of which was reserved for fall sowing, by the very respectable gentleman, a practical farmer, from whom I obtained the seed, and which has since succeeded admirably, and from which by a distribution among our neighbors, large crops have been raised, and can be highly recommended for its desirable properties, which other wheats which we do grow, do not possess; that it should be sown

about ten days earlier, and it ripens about one week later than the ordinary red wheat, by which the great press of seeding and of harvest is obviated; that for several years, when sown alongside of other wheats, particularly the blue-stem, which were nearly destroyed by the *Hessian fly*, while this wheat remained untouched; that it can endure the most severe winters, and not inclined to fall or lodge, owing to its firm and strong stock of straw, which is uncommonly long; that it is a very heavy wheat, weighing last year sixty-six pounds to the bushel, (Baltimore stamp,) and for which our millers gave ten cents per bushel of sixty pounds, above the price of merchantable red wheat.

From the character of its general growth it resembles very much, the old "Lawler" white wheat. About five hundred bushels of this wheat I have nicely and specially prepared for seed, having no *garlie*, nor other impurities. I send you the accompanying sample which you will please exhibit to all the applicants, as I shall advertise that quantity for sale in the American daily paper, in which you will perceive, that I refer them to your office and paper for information.

I intend to deliver the wheat about the first of September, to Jacob Cronise, agent of the Monrovia depot of the Baltimore and Ohio Rail-road company, where persons desirous to procure the seed are requested to apply early, and where they can conveniently be supplied, or by application to

ANTHONY KIMMEL.

Near New Market, Frederick Co. Md.

LARGE MUSTARD.

MR. SMITH: *Hindes Co. Miss. June 28, 1833.*

A neighbor of mine has a stalk of mustard that measures 14 feet 3½ inches in height, one limb of it measures 8 feet 10 inches; you may rely on the accuracy of the measurement. The stalk was growing when measured. The seed is supposed to have come with beans or some other seed of that kind—at all events, it is an accidental growth. The seeds will be saved; I am promised a part, of which you shall receive a portion.

GOOD PRICES FOR TOBACCO.—A hoghead of tobacco, made by Mr. Wm. P. Thomas, of Pittsylvania, (the gentleman who got \$16 for a damaged hhd. some weeks ago.) was sold this week, at Lynch's warehouse for \$13 50. Another hoghead, made by Nathaniel P. Thomas, of the same county, was also sold at the same warehouse this week, for \$15 25.

[Lynchburg Virginian.]

LAST WINTER IN EUROPE.—Some singular facts are connected with the winter which is passing over our heads. As little of severe weather has been felt in this country as under more northern skies. The merry note of the lark was heard in Denmark in the beginning of last month; nor has there been any cold of moment in the north of Russia. At St. Petersburg the thermometer never stood so low as 18½ but for a single day, and the whole season has hitherto proved unusually mild. The centre of Europe has experienced but little cold weather, and still less snow; even in Prussia scarce a flake has been seen. The south exhibits a signal contrast; and the midland of Asia seems to have been the rallying point of cold. Turkey in Europe, too, has been afflicted with its worst extremities; at Odessa it has prevailed without intermission; and the *Ottoman Monitor* tells us that its severity in Turkey in Asia, has been such as to have greatly contributed to the suspension of military operations. In Persia, and the southern provinces of the Russian empire, it is said to have been altogether unprecedented in its virulence. Such a thing as winter is known by name only in Tiflis and Erivan, where the roses bloom in the month of January; but this year the cold has been intenser than is ever felt even in the north of Europe.—*English paper.*

CULTURE AND MANUFACTURE OF TEA.—An American gentleman, physician in this city, gives an account of the culture of tea in the Royal Botanic Garden of Brazil. Of the horticulture generally of that country, he says, "it would be as easy to furnish you with a sketch of the notions upon political economy entertained by the Patagonians, or an elaborate essay upon the state of the fine arts among the Hottentots."

The tea plant (*Thea viridis*) occupies a space, in the garden of 8 or 10 acres, is planted at the distance of four feet from each other. It is a handsome shrub, about two feet high. The leaves are stripped several times in the year; and hence arise the different sorts of tea in use. No particular care is taken of the plant. It blossoms in July, August, and September. The gathered leaves are exposed to the air for a few hours, until they begin to wilt, and are then thrown into circular pans in brick work, under which is a moderate fire. These pans are of iron, four feet in diameter, and about a foot deep. The leaves are stirred briskly for about ten minutes when they are thrown out to another person, who holds before him a flat wicker or willow frame about two feet wide and four feet in length, slightly inclined towards the floor. He strews the leaves upon this frame, and lays over it another frame of the same dimensions and materials. By moving the frame rapidly to and fro for several minutes, the leaves are curled up and fall at the lower end of the frame into baskets. The curled leaves are put over a strong fire for a few minutes, to drive out the remainder of the moisture, and are then put into chests or boxes. The writer thinks each plant would produce full three pounds annually. It is propagated by slips. The writer thinks it might be cultivated in the United States, with much more profit than is obtained from either sugar or cotton—that six men might cure and prepare for market the crop of one hundred acres—and that women and children could do a great portion of the labor. From the known similarity of the climate and soil of China to those of the United States, he concludes that it could be cultivated in the southern States, and from the fact that it grows well in Japan, as high as the 45th degree of latitude, he has no doubt that it will bear considerable frosts. We are inclined to agree with the writer, from the fact that so many of the flowering plants of China and Japan stand our winters perfectly well.—Let the people of the south patronize the exertions of Dr. Perrine, and they will soon cease to complain of the operations of the tariff.—*N. Y. Farmer.*

THE GREY OXEN OF ITALY, says N. P. Willis, in a late letter from that country, are quite a different race from ours, much lighter and quicker, and in a small vehicle they will trot off five or six miles in the hour as freely as the horse. They are exceedingly beautiful. The hide is very fine, of a soft squirrel grey, and as sleek and polished often as that of a well groomed courser. With their large, bright, intelligent eyes, high lifted heads and open nostrils, they are among the finest looking animals in the world when in motion.

FOREIGN MARKETS.

LONDON, June 16.

Cotton.—The cotton trade continues very brisk; the demand for the raw article and for manufactured goods most extensive. The purchases of cotton in this market last week, by private contract and public sale, were above 7000 bags; a further improvement of 1-3d per lb. was realized, a great proportion of the cotton was taken on speculation.

LIVERPOOL, June 25.

The cotton market has been very brisk throughout the last ten days and the sales on an extensive scale, being about 45,000 bags, of which 12,000 have been taken by speculators. Prices of Sea Islands are 4 a ½ advance, and other sorts of American are about 1-8d higher.

AGRICULTURE.

(From the New York Farmer.
MANAGEMENT OF A DUNGHILL.By ROBERT SOMERVILLE, Esq.
Of Huddinton, Scotland.

A friend has put into our hands the following essay on the important subject of collecting and manufacturing manure. It will be perceived that the plan of having the manure in hollows, recommended by distinguished agriculturists, among whom is J. Buell, Esq. is not approved. We are fully of the opinion, that manure remaining for any considerable time trodden down in excess of wet, is very destructive to its nutritious properties.—*Ed. New York Farmer.*

The dung of quadrupeds is the most common, the most useful, though not perhaps the best managed, of any manure that is at present grown. Previously to entering upon the way of using it, we trust a few observations upon the present defective mode of treating it, together with some account of its properties, the means of collecting, preserving, and subjecting it to the process of fermentation, and of increasing its quantity, will be thought of service.

Mode of management at present.—When any considerable quantity, either of stable dung or mixture of animal and vegetable substances, is collected together under certain circumstances of heat, air and moisture, they begin to ferment, and exhibit all the different phenomena of fermentation in a great or less degree, till the process is finished. If we then examine the mass, we find that the vegetables, of which it was originally composed, are decomposed and reduced to their first principles, and are again in a situation to afford food for new plants; by this means a perpetual succession is kept up, and the decay or death of any of these, which, at first view, we might be lead to consider a misfortune, serves for their reproduction.

This point settled, it will readily be admitted, that the more completely such substances are subjected to the process of fermentation, the greater and more beneficial their effects will be upon the soil. It is, therefore, an object of the first importance with every person concerned in the cultivation of the earth, to manage their manures in such a way that they might be completely fermented; and to have their dunghills so situated and constructed as to promote fermentation, and preserve the useful particles contained in the dung, both while the process was going on, and after it is finished.

A careful attention to these points will not only improve the quality, but, as we shall afterwards see, increase the quantity of manure in an astonishing degree.

When fermentation has taken place for some time, in a heap of manure consisting either of animal or vegetable substances, or a mixture of both, the first alteration that is observed is a change of color, and a sensible diminution of its bulk: as the process advances, the bulk continues to diminish, till the fermentation entirely ceases. The diminution is owing to the solid parts of the mass being brought more closely together. The fixed air and volatile alkali escape in form of vapor, and the moisture falls to the bottom, where it either remains, if the dunghill is situated in a hollow, and has a bottom capable of retaining moisture, or runs off, if it is situated upon a declivity.—When this moisture is collected and carefully analyzed, it is found impregnated with the salts contained in the dung, and if spread upon the soil in that state, it will contribute to fertilize the land.

In collecting and preparing dung in this manner, little attention has hitherto been paid either to the site of the dunghill, the encouragement of fermentation, or the preservation of the salts after the fermentation is finished; accordingly we observe the greatest part of dunghills either situated in hollows, and surrounded

with water, which, by chilling the mass, very effectually prevents fermentation—or upon declivities, where they are totally exhausted of every drop of moisture. In these cases, the dung is thrown out carelessly: horses, cattle, hogs, and poultry, are allowed to trample upon and spread it, and even carts and wagons are driven over it.

By this treatment it is pressed into a mass too heavy and compact for the air to penetrate through a great part of it; the sides of the dunghill are scattered about, loses its moisture, and is either blown away by the winds, or returns to a state little better than dry straw; and, when the season arrives for laying it upon the land, the whole is taken out, without considering whether it has fermented or not.

Defects of this management.—To a person who has paid any attention to the subject, the defects of this management must appear in a very striking point of view. The middle of such a dunghill from being hard pressed will be long in fermenting, and even in the end be very imperfectly fermented; and the sides, from being so scattered about and dried, will not be fermented at all. We need hardly observe that the consequences of this management will be a scanty crop, and disappointment to the farmer: this is the ordinary effect, where dung is laid even upon a plain surface.

Bad effects of Dunghills being placed in a Hollow. When the dunghill is situated in a hollow, and has a bottom capable of retaining moisture, the consequences are equally bad, if not worse. The whole of the rain that falls immediately from the clouds, together with the water from the roofs of the surrounding houses, and the natural moisture of the dunghill itself, lodge there and chill it, so as to prevent fermentation. It is certain that stable dungs in such situations will have the appearance of being fermented, but upon examination it will be found only decayed, and from its being steeped so long in water, the greatest part of the salts will be extracted, and what remains, if carefully analyzed, will be found to contain scarce any other principle but vegetable earth.

Loss attending Dunghills being situated upon a declivity, or gravelly bottom.—Where a dunghill is situated upon a declivity, or has a gravelly bottom, the loss is equally great as in the former cases, as the whole of the natural moisture that is pressed out during fermentation, and which is strongly impregnated with the salts of the dung, either runs off or sinks into the earth; nor is this the only loss that is sustained—every shower that falls, by passing through the mass, carries off an additional quantity of the salts, till by repeated washings, the dunghill is left in nearly the same situation as tea-leaves, after a strong infusion has been drawn from them. Finally, by throwing it out in the careless manner already described, taking no pains to lay it up regularly, and allowing cattle, &c. to tread upon, and carts to pass over it, fermentation is long in taking place; even then it is partial and incomplete, and in place of producing good manure, abounding with rich, well prepared substances, it will for the most part be found to consist of articles only half fermented, which, from their parts not being properly separated, are very ill calculated to promote vegetation. Dung is the most likely to be best where the dunghill is upon level ground, and at some distance from the offices.

Having mentioned the present mode of collecting and preparing stable dung, and stated the slothful and defective manner in which it is generally done, we shall now proceed to offer some directions as to the methods of promoting fermentation, and preserving the salts after the process is finished; and lastly, of increasing the quantity of that valuable article.

To promote fermentation in stable dung.—To promote fermentation in stable dung, two things are essentially necessary, namely, air and moisture: without these, no fermentation will take place; and unless they are in due proportion, the process will be incomplete.

It is a circumstance well known to persons who are accustomed to prepare dung for hot beds, that by laying it lightly together in heaps, and watering it gently, fermentation is immediately brought on. It is also known, that in the after stages of this business, hot-bed dung is as completely fermented in the space of fourteen or sixteen days as that in a farmyard generally is in six or eight months.

Every farmer ought, therefore, to institute this practice as nearly as the nature of his situation will admit; and in place of having his dunghill in the stable-yard, allowing carts, cattle, hogs, poultry, &c. to trample upon and disturb it, he should place it in some distinct situation, convenient for his offices, the urine from which should run into receptacles, from which it might be thrown; without the trouble of carriage, into the dung, where it would be of the utmost use in promoting fermentation.

When it is driven to the dunghill, the cart or wagon in which it is carried, should not be driven over the dung as is commonly practised; because as we formerly observed, the feet of the horses and the weight of the carriage will press it so hard, that the air will be in a great measure excluded, and by that means fermentation prevented.

If we inquire either of the farmer or his servant what is gained by this exertion, he will only be able to say that the load is laid upon the top of the heap—a labor which a man could readily perform to much better purpose in a few minutes: the whole cart load ought to be laid down by the side of the dunghill, and afterwards thrown lightly upon it with a fork—the trouble of doing which would be trifling, and the advantage immense.

If dung laid up in this way contains a sufficient proportion of moisture, it will immediately begin to ferment, and the process will be soon and completely finished. Particular attention ought therefore to be paid to this circumstance; and if at any time the dung is laid up dry, it should be immediately watered. In summer this will frequently be found necessary, especially during dry weather; and as most farms possess a sufficient command of water, it can very easily be done.

Where this method is had recourse to, the dung will be completely fermented in the space of six or seven weeks at the utmost, and in general will be found of one-half more value than that which is made in the careless and slovenly manner we have described.

Situation and construction of Dunghills.—The importance of good manures to all agricultural operations is such, that we should naturally have expected to find every thing relating to it made a primary object with farmers. On the contrary, no part of rural economy has been less the subject of inquiry: the situation and construction of dunghills in particular, though highly deserving of notice, have for the most part been considered as a matter of indifference.

As was formerly mentioned, a hollow is improper for the site of a dunghill, from the circumstance of its lodging water, and preventing fermentation: a declivity is equally bad, as it serves to drain and carry off the moisture saturated with the richest salts of the dung; a gravelly bottom is worse than either of those, as the moisture sinks down into the earth, and is irrecoverably lost.

Proper situation for a Dunghill.—The situation best calculated for the site of a dunghill, is that which is nearest to a level, with a bottom capable of retaining moisture, and, if possible, covered with a shade. The whole should be enclosed with a wall at least four or five feet in height, with an open space at one end for carting away the dung. If the bottom is not clay, it should be laid with, and paved above, either with broad flags or the common paving stones used for streets. The American farmer may find it convenient to lay a floor of thick plank. At the end opposite where the opening is left, a reservoir should be dug, which might either be lined with clay, and built round with stone, or fitted with a wooden cistern

made water tight, into which a pump should be put for drawing off the moisture daily.

This reservoir should be situated at the most depending part of the dunghill, with an opening in the wall immediately opposite to it. The pavement should have a number of channels of a least five or six inches deep, and the same in width, all tending towards the opening; these channels should be well paved, and filled with brushwood before the dung is laid down; by which means they will be kept open, and the moisture find a ready passage to the reservoir. For better explaining the idea, we refer the reader to the annexed plan of a dunghill, with the proposed channel and reservoir. Every dunghill should be so situated as to have its longest sides run from east to west, surrounded by a wall, and covered with a roof. The wall on the south side of the dunghill should be of such a height, as to prevent entirely the sun's rays from touching the dung on the other three sides, however, there is no necessity for its being so high; six feet from the ground will be quite sufficient, and the roof can be supported by pillars.

The expenses of a roof, which need only be thatched, will soon be compensated, not only by the superior quality of the dung, but by the conveniences which it will afford, as it may easily be converted either into a pigeon house, a poultry house, or a store for the smaller husbandry utensils.

(From the Genesee Farmer.)

ON THE CULTURE OF LUCERNE.

We are gratified in being able to give the following interesting communication on the culture of lucerne, from an English gentleman who has recently emigrated to Canada; and we hope the writer will often employ his pen for the benefit of the farmer.

Caraboe, Upper Canada, May 12, 1833.

This plant is much, though not generally, cultivated in the south of England, and its excellence so fully proved by those who have taken the pains to adopt the proper mode of culture, that I do not hesitate furnishing you with the plan I for many years pursued, that your readers may follow it if they think fit so to do, how I shall get on in this country on new land, and among the stumps, time must show—but having fully ascertained the intrinsic worth of the article, and the profit of it to a farmer, I mean, as far as circumstances will permit, to adopt my English plan of culture. I do not hesitate strongly to recommend its growth to my neighbors and your friends the patrons of the Genesee Farmer, as experience has convinced me it is both the most productive and nutritious green food, that can be given to any animal.

The first thing that requires attention in the cultivation of lucerne is the quality of the soil, which must not be wet at bottom. A bottom of loam, sand, gravel or stone, and not of clay, as that always more or less holds water, and when the roots of the lucerne come to the stagnant water the plant begins to perish. I have always sown in March, but in this country I should say from the middle of April to the end of May, is the most proper and best season.—Two modes may be pursued—the first I shall adopt here and recommend to all similarly circumstanced with myself, on new land and while the stumps are standing, as it will I think be most convenient, but on clear ground I should prefer the second mode.

Prepare a small seed bed by letting it be well cleaned and dug deep; (for the tap root of lucerne runs to a great depth;) sow the seed very thinly in rows about eighteen inches apart; when the plant is well up take care to weed and keep your rows clean, for grass and weeds are the destruction of lucerne. The grand secret (if such it may be termed) in the culture of lucerne, from beginning to end, is **KEEP IT CLEAN**. My Canadian brethren say, that is too much trouble, and will be too expensive in the present state of things, while labor is at the present price; but I

tell them all, it will repay, and that handsomely, to attend to the cultivation of lucerne and therefore I wish to see it well done. Sow as thin as you can; the plants will come too thick. In the ensuing spring I shall proceed with my next step, though it may be as well to wait over year or till the fall. Clean and plough deep your land—drag it as smooth as possible—prepare drills two feet apart, transplant some of your strongest and most healthy plants into these drills at least one foot asunder, for when a few years old a vigorous plant of lucerne will occupy at least a circle of a foot square. By this means you can the more readily (and which must be done) plough every spring between the drills and hoe the sides of the plant. I thus thin my seed bed, and the remaining plants will gain strength and thrive the better. The following spring I shall clean my seed bed by transplanting, and follow up my drill system. You must cut off the grass from your plants late in the fall, before it begins to die away. The first year after transplanting it should only be cut once, but in succeeding years you will I doubt not be able in this climate to cut it at least four times.

In England, I one season cut six times, and at four of the cuttings the produce was, I am sure, not less than at the rate of from six to seven tons to the acre, at each cutting; but than I hoed it between each cutting; manured well in the autumn, which was dug in early in the spring before the plant began to shoot.—In short, I made it a hobby and entirely adopted garden culture, but that will be expecting too much from a Canadian farmer; however I was repaid for all my trouble and expense.

The second plan is simply to sow your seed in drills and at the distances I before named; keep trimming out your plants from time to time so that no two plants touch—for I am persuaded that two good healthy plants standing separate will produce as much as five that touch or are huddled together.

Thus cultivated, and **KEPT CLEAN**, with a little rotten manure, put on in the fall after your last cutting, and ploughed in the spring, lucerne will stand and prove a flourishing and profitable crop from twenty to twenty-five years.

Lucerne may be and is also sown broadcast, proving a most profitable crop for a few years; but as it cannot endure grass or weeds on the surface, I should not think of sowing it thus to stand more than three years; and I deem it, sown in this way, a better and more profitable crop than sainfoin which is only a triennial.

I should add, the fly will as greedily devour the young plants of lucerne as they do the turnip, but that is of little consequence, if you adopt the plan of transplanting or drill system, and then thin from time to time.

I threw down a small quantity of seed last year as late as September, it came up, took good root and has stood the winter of this climate to my entire satisfaction.

J. VENIS.

(From the New England Farmer.)

PREPARATION OF SEED CORN AND WHEAT.

MR. FESSENDEN: Deerfield, June 17, 1833.

In addition to the information you have given on preparing seed corn with tar, I cheerfully comply with the request of your "worthy friend, Essex North," in relation to that subject. My method of preparing seed corn with tar, may be unlike that of any other person; whether it is as good or better, I am unable to say; I only know it answers my purpose perfectly well.

I put my tar into a kettle of boiling water of sufficient quantity to cover the whole of the seed I wish to prepare; when the tar has remained long enough in the water to become a thin liquid, I turn my corn into the kettle or other vessel containing the hot water and tar. I then turn off the water, leaving the corn and the tar at the bottom, and commence stirring it while hot,

and continue it till the tar is equally distributed among the corn, and every kernel has received a wetting; I then sprinkle in plaster, and continue sprinkling and stirring alternately, until the tar is all absorbed and the kernels completely separated and dry.

I have never used any thing to make the tar thinner, nor have I ever soaked the corn previous to the preparation; though I am not certain but it would vegetate sooner. Yet I think that if the tar *should* be an obstruction, that the swelling of the seed, after the application of tar, would assist the germ in bursting the envelope with which it is enclosed. I mention one fact, however, to show that tar alone is no obstacle; in the course of my planting the present season I got out of tar, but had on hand a mixture of tar and rosin, so hard that it would scarcely yield to pressure; I used this as a substitute with equally good success. I am not very particular as to the quantity of tar, not measuring it, but should think rather over half a pint to one peck of corn.

Winter grain looks well, as is usual in cold seasons, and this so far is certainly one.

A new era has commenced here in the culture of winter wheat, on old lands. If the ground be well prepared and in a high state of cultivation, as much certainly attends this, as most other crops; a top dressing of manure, to be harrowed in with the seed answers well. Lime should also be freely used. Wheat on strong lands should be sowed thick, from two to two and a half bushels to the acre, is not too much; this makes the straw fine, is much less liable to rust and blight, or to lodge down flat, and rot, than when sowed thin.

My method of preparing seed, is to put it into brine fully saturated with salt; this is a little too strong; as it will float too much of the wheat, dilute it a little with water, so that the plump wheat will go down, leaving all the foul seed, lighter than wheat, on the surface, to be skimmed off, then drain the brine from the seed and stir in slaked lime with the wheat.

Yours, respectfully, J. WILSON.

(From the New York Farmer.)

BONE MANURE FOR CORN.

In conversation with Dr. B. of Long Island, we learn that his application of bone manure is attended with beneficial effects on corn. The bone was first fermented by heaping it up with a sufficient quantity of horse manure, to produce fermentation, and then spread on the ground at the rate of twenty bushels to the acre. Although the season is very backward for corn, yet now, 25th June, the contrast with other portions of the field manured in various ways is quite considerable.

His farm is about eight miles from the landing.—The expense of carting a load of twenty bushels of bone dust is seventy-five cents. This added to the cost of the bone, at the rate of thirty cents a bushel, amounts to six dollars and seventy-five cents. A moderate manuring of leached ashes, the most favorite manure of Long Island, requires five loads, costing one dollar and seventy-five cents; this together with the cartage amounts to twelve dollars and fifty cents, showing a difference of five dollars and seventy-five cents in favor of bone manure. By reference to former pages of the current volume of the New York Farmer, it will be perceived that this manure is of a durable nature; and the advantages of using it cannot fail of being perceived, especially by those farmers who are obliged to cart their manure a considerable distance. We shall continue to make our readers acquainted with the results of experiments now making with this most important manure, and in the mean time we hope they will not be backward in adding to the stock of information by trying similar experiments. It is with pleasure we learn that several of the neighbors of Dr. B. intend giving orders for considerable quantities for fall crops.

HORTICULTURE.

(From the Genesee Farmer.)

GERMINATION OF SEEDS.

Greatfield, 7 mo. 6, 1853.

It is often said of certain seedsmen that they are in the practice of selling *bad seeds*; that is, either seeds that have been kept too long to vegetate, or seeds in which the vital principle has been purposely destroyed by *baking*. The supposed design is to increase the sale, so that when the cultivator has sowed one paper, he may be induced by its failure to purchase another.

To these charges, I make no reply, except that I am satisfied *good seeds often fail to grow*.

I sowed some of the scarlet Havana tobacco, from which I had not a single plant. This proof of its being bad was about as strong as people commonly have, when they condemn a parcel. The next year however, I sowed some from the same parcel of seeds when they were *one year older*, and had as many plants as I wanted.

Laterly when I obtain rare seeds not known to grow freely, I sow them in as many different situations as are likely to prove favorable. Some seeds will grow in almost any part of the garden; but others are brought to germinate with difficulty; and it is not uncommon to have them growing in one spot when they entirely fail in every other. Of this I have several instances in the present season. The failure of rare seeds to grow in common gardens, I should scarcely consider as any proof that the seeds were bad.

To understand this subject we must remember that seeds of this sort are generally from climates very different from our own; and to a different temperature, and a different degree of moisture, we often add a difference of soil. The seeds of our wild plants are sown by nature in vegetable earth, and in the shade. Many of them refuse to germinate in cultivated land. Who would think of raising from seed the *Orchis*, or the *Cypripedium*, in a common garden? Or even *Gerardia flava* or *Gerardia glauca* which are sure to dwindle and perish in the open sunshine?

Many seeds are very small, as those of *Mimulus*. If these have much more than a sprinkling of fine earth over them, they are irretrievably lost. They must be left then, near the surface. But if this be allowed to dry, they cannot grow. If they sprout during wet or cloudy weather, the first hot sunshine may dry the earth deeper than their *very short roots* penetrate; or its heat may destroy them. These plants, from their small size and brief duration, may not be observed; and the seeds from which they have sprung will of course be condemned.

I must here make a digression. Very small seeds, after being slightly covered with vegetable earth on the north side of a fence or wall, may be further protected with fine brush,—particularly with the leafless branches of hemlock. I have used it with great advantage. While it admits light enough, it intercepts the direct rays of the sun, and prevents the wind from drying the surface of the ground. As the plants acquire strength, a part of the brush may be removed from time to time.

Seedling plants are sometimes not found so soon by the sower as by insects. I lately sowed *Petunia nyctaginifolia* in two places: in one spot the plants grew well; in the other they were totally destroyed by insects soon after they came up; and had I examined the spot one day later, I should probably have concluded that the seeds had not germinated.

In garden beds where seeds have been evenly sown, the young plants often appear in distant patches leaving wide spaces unoccupied. This is no proof that the seeds were bad. Either insects have destroyed the plants that grew immediately, or some parts of the ground have been more favorable to the ger-

mination of the seed, than other parts, and the latter suggestion is by no means improbable. Even in hot beds, where insects intrude more seldom, we may often observe one part of a short row crowded with plants, while in another part, only a few inches distant, not a plant can be found.

The seeds of some plants germinate very sparingly as *Nuttallia pedata*. By no treatment which I have yet given them, has more than one plant been produced among thirty or forty seeds.

It is doubtful if seeds of *Dictamnus* can be made to grow after they once become dry. I have never succeeded with them after they had been kept a few weeks in the house.

Some seeds seem to be more perfect in certain years. I have had to increase the white *Polemonium caeruleum* by division; but in the present season, I have many hundreds of young plants from seeds naturally scattered.

I therefore conclude that seedsmen ought not to be so charged, unless the proof be more direct than a simple failure of rare seeds under common culture.

D. T.

[The Editor of the American Farmer takes the liberty of adding to the above the remark, that many seeds lay in the ground a year before they vegetate, and many others must be sown immediately after they are gathered, and then remain till the next spring in the ground. Those who would have good marigolds, poppies, *Clarkia pulchellas*, and many others, must sow the seeds in the fall, as also should be sown all our native flower seeds.]

(From the London Gardener's Magazine.)

A SUCCESSFUL METHOD OF CULTIVATING THE CHRYSANTHEMUM INDICUM.

Courtlands, Jan. 18, 1828.

Sir,—The following method of treating the chrysanthemum, is, I believe, new; and as it answers successfully, I think it may be acceptable to some of your readers.

In the plan of cultivation to be described, I propose to myself to obtain all the advantages of different heights, large flowers, and the best disposition of the whole plant during its flowering season.

To procure the highest growth, I detach from the old plants the most promising suckers, about the first of March. These I place singly in small pots, and set them in a cold frame, giving the usual attention, and shifting them three times in the course of the summer.

My second are set from cuttings struck about the middle of May, placed singly in pots, and are shifted twice in the season.

The lowest grade, which form bushy plants, rise from eight to eighteen inches high. To obtain such, I do not keep them down by pruning, as is commonly done, but by layering some of the principal shoots in the following way:—Having some of each variety planted in the spring, on a south border, there they are allowed to remain till the middle of August, at which time they have formed fine bushy heads, and from these are to be produced my dwarf-sized plants. Previously to layering them, I select and bend down to the surface of the ground as many as are wanted, fixing them there by long hooks, at the place whence I propose the new roots shall proceed. In a few days the shoots regain their natural upright position, they may then be layered in pots placed close thereto, and half-plunged in the soil; this is easily done without risk of breaking off the points, to which they are liable by a different practice. When placed in the pots, fix them there by hooks, which should be long enough to pass through the hole at bottom, and thus keep the whole steady. The layers are assisted by regular watering, and having moss or short grass laid on the surface of each pot: when sufficiently rooted, they are taken off, and shifted into larger pots, in which they are intended to flower.

My next object with all these sets of plants, is to

train them to the best form: as stage-flowers, they should present their best face to the spectator, every flower should be seen, and they should be regularly arrayed as possible. To train them to this effect, I place them, as soon as shifted for the last time, against a south wall, allowing them plenty of room from each other, plunging the pots in the ground, and fixing the principal shoot only with a shred to the wall. In this situation, they in a short time acquire the desired form, which they retain throughout the flowering season. The plants are not tied to sticks till the flower buds begin to form; they are then detached from the wall, but still kept as near it as possible. To give the necessary symmetry, a little contrivance must be resorted to; some of the longest side branches which are not wanted, or may be spared from the top, are bent spirally downwards behind, and their points protruded through the foliage below, so that flowers may appear regularly over the face of the plant. I use small copper wire for this purpose, which I find much more suitable than either brass or thread.

Large flowers are obtained by a judicious thinning of the flower buds. Those sorts which have many secondary buds should be divested of them, especially if they are inferior in size and untimely in blowing. From one to three of the most promising will suffice for every side branch; and in most cases one only may be enough, provided the buds are properly distributed. This thinning ought particularly to be practised on the superb white, two colored red, changeable pale buff, &c. but such as are cluster flowers should be thinned more sparingly; the superb cluster yellow, for instance, which flowers in a kind of raceme, should be allowed to show its character.

I am, sir, &c.

WM. MITCHINSON.

(From the Genesee Farmer.)

SUN FLOWERS.

Buffalo Horticultural Garden, }
May, 1853.

MESSRS. EDITORS:

In a late number of the Farmer, *Ulmus*, one of your most interesting and valuable correspondents, puts down the sun flower as utterly useless, excepting as a flower. I have no great opinion of it myself for very profitable crops, and agree with him that it is a splendid appendage to the flowering department of the garden. I admire the stately growth of the plant as well as the flower lifting its tall head far above its more humble contemporaries, always watching the sun to catch his first and last beams. The seeds, however, I consider valuable for feeding poultry, but not to be preferred to corn, which they always choose before any thing else. The plant may be made to produce an abundance of seeds with but very little care or trouble. The seeds should be put in the ground as early in spring as possible, and if convenient to plant them in the fall it is all the better. It requires a middling rich soil—if very rich it runs too much to stalk, and if very poor produces but little seed. As soon as the first flower appears, it throws out a great number of branches from its sides, each of which will if let alone produce a flower, which if permitted to remain on the stalk, the seed cannot all ripen; these should therefore be removed, leaving only from four to six heads which will be well filled with good heavy seeds; but one plant should be suffered to grow in a place—plant four or five feet apart. I fed the seeds to forty or fifty fowls once or twice a week all last winter as a change of food, and they appeared to be as fond of them as of corn. And besides their grand appearance when in flower, and remaining so, as they do, for a long time, they invite into the garden, and about our houses great numbers of yellow birds, attracting them away from our more valuable seeds, and bringing the sweetest of music to our windows and our ears, cheering us amidst our labors; and besides all this, they furnish food for chickens, preparing them to cook well for thanksgiving and Christmas dinners, and affording us eggs for pumpkin pies in the fall.—

Now, duly estimating all these advantages, who would give up and condemn the sun flower?

Another of your correspondents apologizes for Ulmus by recommending a better and larger than the common sort, and says that his produces flowers three feet in circumference. This is *prodigious* large though—I should like well to obtain some of the seeds. I think this kind must have originated on the island where the pumpkins are said to grow so large that they are used for sentry boxes.

A. BRYANT.

RURAL ECONOMY.

ESSAY ON COOKING FOOD FOR HORSES.

BY MR. DIX, VETERINARY SURGEON.

The following extract cannot fail to be highly interesting and useful to the owners and managers of horses.

Horses, like other animals, do not always content themselves with just eating what is necessary for their proper support: they are apt to indulge in any thing they find agreeable to their palate; and there is an immense variety in their food, if we look to the various grasses which are to be found in good old pasture, and by that indulgence they expose themselves to various diseases, and, for the time, render themselves unfit for any active exertion. If a horse's bowels are loaded with clover, or any kind of food, we know he could not gallop any great distance without injuring himself. If he has been fully fed, and is allowed to drink freely of water, and afterwards started on a journey at a smart pace, the almost invariable consequence is, that he begins to purge, he is soon fatigued, he perspires from the weight he is carrying in his belly, he gets sick, and cannot go on. The natural action of the bowels throws off the load, and if the horse is not pushed on too fast, he is sometimes able to get well to the end of his journey; but if his pace is increased he gets sick, the load and mass contained in the stomach and anterior portion of the bowels cannot escape, and as exercise prevents and suspends the digestive process a chemical process is set up in its stead, producing rapidly various derangements, which are too frequently followed by violent disease or death. This occurs less frequently in well regulated coaching stables where a regular and large allowance of oats are given; because, as in coaching stables, the quantity of oats is so large that little hay is eaten, the horses are therefore less liable to gorge themselves than under other circumstances, but even there, it is generally, nay, I may say invariably, considered necessary to turn the horses round in their stables for half an hour before starting, in order that the stomach may have time to act in some degree upon what has been taken into it, and that it may have passed into the bowels. The animals, are, by this means, allowed time to empty themselves, which they will generally be found to do as they leave the stable or as they start with the coach.

Under this view of the subject, it will be seen that a moderate proportion of nutritious food is only required, and that it is advisable to present it in as small a compass as will suit the nature of the digestive organs. But it would appear that a certain proportion of bulk is also necessary to the quantity of nutritious matter, to keep up the proper action of the bowels. If the food is too rich and too much concentrated, it deranges the stomach and bowels and produces disease; if too poor and bulky, it yields not the proper degree of support to the animal, while its bulk impedes respiration, and its weight detracts, by its burdensomeness, from the capability of the animal exerting himself.

From these remarks, it will appear obvious, that the grand desideratum is to give food containing as much nutriment, and in as small a bulk, as is consistent with the economy of the animal.

If this problem is solved, it will follow as a co-

rollary, that it will be important to give that food which has been found best suited in its proportions, in such a state as is best suited for digestion. This is a point however, worthy of consideration, and naturally suggests the question, how is the body supplied with nourishment by taking in food into the stomach? The common notion is, that much depends, as I have indeed before mentioned, on the hardness of the food; and it is a common saying, in order to show off a horse which is in condition, "that he has plenty of hard meat in him." Now, this is a very silly and erroneous idea, if we inquire into it, for whatever may be the consistency of the food which is taken into the stomach, it must before the body can possibly derive any substantial support or benefit from it, be converted into chyme,—a pultraceous mass; and this as it passes onward from the stomach into the intestinal canal, is rendered still more fluid, by the admixture of the secretions from the stomach, the liver, and the pancreas, when it becomes of a milky appearance, and is called chyle. It is then taken into the system of the lacteals, and in this fluid, this soft state—and in this state only—mixes with the blood, and passes through the circulating vessels for the nourishment of the system.

The food, no doubt, when taken in the stomach, at once satisfies the animal's hunger; but if the digestion is suspended by any means, it soon proves injurious, and weakens, instead of supporting, the system.

Now, if the hardest of the food must, in this manner, be broken down and dissolved before it can really enter into the system, it must appear evident, that something approaching to this solution, if done artificially, would greatly aid the organs of digestion in this process, and that thereby much exertion might be saved to the system, and, at the same time nourishment would be more rapidly conveyed into it. It is with this view that I would recommend the general adoption of cooking food for horses and cattle.

When the food is broken down by cutting the hay and straw, and bruising, boiling or straining the oats, not only is there less waste, by the whole being used as manger meat, but much labor is saved to the animal, in having tough dried hay, and hard oats, masticated for him, and in a state almost prepared for digestion; and as regards the oats, all the nourishment they can afford is readily yielded to the digestive organs; for not only may I refer to the fact already stated regarding the poultry on board the *Coldstream Indiaman*, but I may also observe the fact that we find, that unless the grain is broken down, or otherwise killed by boiling, it is not acted on, and will grow as readily after having passed through the horse, as the olives did after having passed through the turkeys. Oats like every other seed, is possessed of vitality, and it would appear that the organs of digestion, and their secretions, do not act upon bodies possessing it. Were it not for this exception, the gastric juice, which acts upon and dissolves every dead matter taken into the stomach, would act upon the stomach itself; but it is not possessed of this power. Worms are, from this cause, also allowed to live in the stomach, but when dead, become acted upon like other dead matter. Hence we often find worms when destroyed by medicine, disappear, although we have not observed them pass with the feces.

It is, therefore, necessary to destroy the life of the food taken into the stomach, before it can yield nourishment to the animal. This may be done, as already stated, by bruising; and the finer it is bruised the better, because it is capable of being more completely mixed with the cut straw or hay, and the whole is then more easily eaten; but as the experiments of Captain Cheyne have shown, it may also be steamed or boiled, and given with the same advantage, and from what has been stated regarding digestion, it must be pretty obvious that this kind of cooking brings the food nearer to the state of being readily dissolved and acted upon by the digestive organs. The only ob-

jection which will at once occur, I know is, that boiled or steamed meat will incline a horse to purge; this, however, is not so much the case as many, without trial, may suppose, and where it does occur, is perhaps owing to too large a quantity being given at one time, as indeed is almost invariably the case; for stablemen, when they give boiled food, always suppose it necessary, at least the practice is, to give nearly double the quantity or more at a time, than they would think it proper to give of raw food; but if the rich cooked or stewed food is mixed with a less nutritious and raw material, the whole of the boiled is taken into the system, without producing the laxative effect. Nay more, it sometimes proves, in cases of horses which have a natural tendency to purge, that, by a judicious use of soft feeding, this is overcome. Captain Cheyne had a grey horse of this kind, and it was feared that he would not agree with the feeding, but it is found he now does his work better than ever he did, and with less tendency to laxity of bowels than formerly, and when I saw him a few days ago, he was as fat on the rib as any horse in the working condition ought to be.

All horses on this restricted feeding are found to be light in their belly; but, while this is the case, the appearance of their coats, the quantity of fat on their ribs, and the manner they are able to do their work, show that they have sufficient nourishment, while (what is the subject of the most important consideration with me) their dispensing with the doctor shows that their health is most materially improved by it. In conclusion, I shall only at present mention, that as I was passing Mr. Croad's office, two or three days ago, and observing a pair of horses, as fresh as racers, in one of the pair horse coaches, he observed, what was worthy of notice, "There's condition for you," and (pointing to about two bushels of oats and cut hay on the coach) "this is there allowance for the night, and which is sent out regularly every day to the uut stages."

If such, then is the fact with regard to horses doing fast work, the advantages which might be obtained by a similar plan being adopted among farm horses, must be too obvious to require further argument.—*Ed. Quar. Jour. Aug. 1832.*

(From the American Sentinel.)

INCOMBUSTIBLE WASH AND STUCCO WHITEWASH.

The gentleman who furnishes the following, assures us that the receipt is what it purports to be—and that he believes it to be a very valuable one.

The basis for both is lime, which must be first slaked with hot water, in a small tub or piggin, and covered to keep in the steam; it then should be passed in a fluid form, through a fine sieve, to obtain the flour of the lime. It must be put on with a painter's brush—two coats are best for outside work.

First, to make a fluid for the roof, and other parts of wooden houses, to render them incombustible, and a coating for brick tile, stone work and rough cast, to render them impervious to the water, and give them a durable and handsome appearance. The proportions in each receipt, are five gallons. Slake your lime, as before directed, say six quarts, in which put one quart of clean rock salt, for each gallon of water, to be entirely dissolved by boiling, and skimmed clean, then add to the five gallons, one lb. of alum $\frac{1}{2}$ lb. copperas, $\frac{1}{2}$ lb. potash—the last, to be gradually added; two quarts of fine sand or hard wood ashes must also be added; any coloring matter may now be mixed, in such quantity as to give it the requisite shade. It will look better than paint, and be as lasting as slate. It must be put on hot. Old shingles must be first cleaned with a stiff broom, when this may be applied. It will stop the small leaks—prevent moss from growing—render them incombustible, and last many years.

Second. To make a brilliant *Stucco whitewash*, for all buildings inside and out. Take clean lumps of well burnt stone lime—slake the same as be-

fore, add 4 lb. whiting or burnt alum pulverized, one lb. loaf, or other sugar, three quarts rice flour made into a very thin and well boiled paste, starch, or jelly, and one lb. cleanest glue, dissolved in the same manner as cabinet makers do. This may be applied cold within doors, but warm outside. It will be more brilliant than plaster of paris, and retain its brilliancy for many years, say from fifty to one hundred.—It is superior, nothing equal. The east end of the President's House, in Washington, is washed with it.

MISCELLANEOUS.

(From the Foreign Quarterly Review.)

INFLUENCE OF THE MOON.

Annuaire pour l'An 1833, présenté au Roi par le Bureau des Longitudes. Notices Scientifiques par M. Arago. 15mo. Paris.

Among the opinions or prejudices relative to the phenomena of the natural world, which mankind seem to have adopted by common consent, there is none which has prevailed more universally, or from an earlier period of time, than that of the moon's influence on the terrestrial atmosphere and the state of the weather. It is in vain that philosophers affirm that they can trace no physical connection between the moon and the effects ascribed to her; to the sailor, the agricultural laborer, and indeed the great mass of mankind, the influence of the moon on the weather is a *fact* established by every day experience, the truth of which it would be absurd to call in question.—Whether the notions so universally diffused on this subject are to be referred to the class of vulgar prejudices, or have any foundation in fact, is a question which M. Arago has discussed at considerable length in the excellent little annual whose title we have now copied. In the present state of science such a discussion may to some appear superfluous, but the labor of the philosopher is not thrown away when it tends to eradicate even a single prejudice. For this reason and because the subject is in itself really very curious, we are induced to present our readers with a brief abstract of M. Arago's very interesting paper.

The first question which M. Arago undertakes to examine, is, *whether the moon exercises any influence on the rain.* The data on which he founds his remarks are derived from a series of observations published by M. Schubler, a professor at Tübingen. They comprehend a period of twenty-eight years, and were made at the following places, namely at Munich, from 1781 to 1783; at Stuttgart, from 1809 to 1812; and at Augsburg, from 1813 to 1828. From the comparison of these observations, it appears that the maximum number of rainy days takes place between the first quarter and the full moon, and the minimum between the last quarter and the new moon. The number of rainy days in the last of these intervals is to that in the first as 696 to 815, or in round numbers as 5 to 6. And this proportion is not only true of the twenty years taken together, but also of the separate groups of four years, which give analogous numbers. We are therefore to conclude, if we put faith in the observations, that it rains more frequently during the increase than during the wane of the moon.

The above results are confirmed by a series of observations made at Vienna, and discussed by Pilgram in the year 1788. On 100 repetitions of the same phase, Pilgram found the falls of rain to be as follows: new moon, 26, mean of the two quarters 25, full moon 29; consequently at Vienna, as well as at Augsburg and Stuttgart, it rains more frequently on the day of the full than on that of the new moon.

Another element remains to be taken into consideration, namely, the moon's distance from the earth, which admitting the lunar action on the atmosphere, it is natural to suppose will have a marked influence on the phenomena. In fact, Schubler found that during the year, three hundred and seventy-one anomalous

revolutions of the moon which take place in twenty-eight years, the number of rainy days included within the seven days nearest the perigee were 1169, and within the seven days nearest the apogee 1096. From the observations at Vienna, Pilgram found that during 100 lunations, the number of rainy days at the perigee were 36; and at the apogee 20 only.—Thus, other circumstances being alike, the nearer the moon is to the earth, the greater are the chances of rain.

"Confining ourselves," says Arago, "to the principal results, it seems difficult to resist the conclusion, that the moon exercises an influence on our atmosphere; that in virtue of this influence rain falls more frequently towards the second octant than at any other epoch of the lunar month; and lastly, that the chances of rain are fewest between the last quarter and the fourth octant."

The influence of the moon on the terrestrial atmosphere seems also to be rendered evident by observations of a different kind, namely, the mean heights of the barometer at the different lunar phases. On calculating a series of observations made at Padua by the Marquis Poleni, and extending over a period of forty-five years, Toaldo found that the mean height of the barometer at the quarters is greater than its mean height at the syzygies, and that the difference amounts to 0.16 millimetres.

From the observations of M. Flaugergues, made at Viviers, in the department of Ardèche, and comprising a period of twenty years, there results: mean height at the quarters 755.81 millimetres, mean height of the syzygies 755.39, difference 0.42.

From a series of observations made at the Royal Observatory at Paris, and discussed by Bouvard, the following results were found—mean height at the quarters 756.59 millimetres, mean height at the syzygies 755.90, difference 0.69.

Thus we have three distinct series of observations, made at places considerably distant from each other, and all pointing to the same conclusions. The chances are small that such an agreement is merely accidental; and it seems a fair inference that "the moon in our climate does exercise an action on the atmosphere, very small indeed, but clearly indicated by the comparison of a large number of barometric observations." Few, we should think, will be disposed to attach much value to the minute differences above noted.

Admitting, however, the lunar action on the atmosphere to be established, the next question is to determine its nature. Now the moon can be supposed to act on the atmosphere only in one of three ways, either by its attraction, by the light which it reflects, or by obscure emanations of an electric, magnetic, or unknown nature. As the lunar action, of whatever nature it is, causes an inequality of pressure, indicated by the barometrical observations, it would appear, *a priori*, most probable that is exercised in the way of attraction. On this subject M. Arago enters into a pretty long argument, through which our limits will not permit us to follow him. The result, however, is, that if the effects of the lunar attraction on the atmosphere are at all sensible, they must follow a law entirely different from that which is indicated by the above observations. In fact, it is easy to see that if the variation of atmospheric pressure arises from the attraction of the moon, it ought to be precisely the same at the new and full moon, and also at the first and last quarters.—But according to the observations of Flaugergues, the difference of pressure attains nearly its maximum to the quarters, when, according to the theory, it ought entirely to disappear. We may remark, that this subject was examined many years ago, by M. Bouvard, who satisfactorily demonstrated that the atmospheric *tide*, so far as it depends on the same cause which produces the tides of the ocean, and is governed by the same laws, is altogether inappreciable. The conclusion therefore is, that "the in-

equalities of pressure indicated by observation must be referred to some cause different from attraction; to some cause certainly depending on the moon, but of which the nature and mode of action still remain to be discovered.

M. Arago next proceeds to the examination of the popular opinion regarding the influence of the phases of the moon on the changes of the weather. From the observations computed by Toaldo, the ratio of the number of changes of the weather to the number of no changes of the different phases of the moon, was found to be as follows: new moon, 6 to 1; full moon, 5 to 1; first quarter, 2 to 1; second quarter, 2 to 1; perigee, 5 to 1; apogee, 4 to 1; that is to say, of seven new moons, six were accompanied with a change of weather, and at one of them there was no change; of six full moons, five were attended with a change; and at the quarters, the changes were twice as frequent as the continuance of the previous weather.

These results would be decisive of the question, if their accuracy were beyond suspicion, but independently of the arbitrary sense that may be attached to the term change of weather, it appears that Toaldo "does not content himself with attributing to the phases of the moon the changes which take place on the very day of the phase; he classes also, in the same category, the changes of the day that precedes and follows. In certain instances, he extends the lunar action to the second day before and after the phase. In adopting such bases it is to be wondered at, that the moon has appeared to be endowed with so powerful an influence?"

The result of Pilgram's observations at Vienna, is entirely different. During a hundred lunations the number of changes of weather on the days of the respective phases, were as follows:

N. moon, 58	Perigee, 72	N. moon in apogee, 64
F. moon, 63	Apogee, 64	F. moon in perigee, 81
Quarters, 63	N. moon in perigee, 80	F. moon in apogee, 68

It results from the simple inspection of this table that with regard to the changes of weather, the *new moon* is the least active of all the phases. The contrary is proclaimed by popular opinion. The observations, nevertheless, from which the table is deduced, extend over fifty-two years; and as Pilgram was himself a believer in the lunar influence, it may be inferred, that if he committed errors, they would not have a tendency to militate against his own preconceived notions.

Among the ancients the opinion was universally entertained that the different aspects of the moon furnish sure *prognostics* of the future state of the weather.

"It," says Aratus, "on the third day of the moon the horns of the crescent are sharp and well defined, the sky will continue serene during the whole of the month."

This is a notion which we believe to be very prevalent at the present day among the peasantry of our own country. The following is the commentary of Arago:

"In reality, when the moon in the evening begins to disengage herself from the sun's rays, she has always the form of a crescent, terminated by two very sharp horns; but if the atmosphere happens to be troubled the horns appear enlarged. This enlargement, however, is a mere optical illusion, and is occasioned by strongly illuminated clouds, in apparent contact with the moon, and seeming to form a constant part of her body. The fine extremities of the crescent are then lost as it were in the parasitical light which surrounds the moon, and become invisible to the naked eye. All this is rendered evident by employing a telescope, which destroys the illusion."

Many other aphorisms of the same nature might be quoted from Aratus, Theon, Theophrastus, Pliny, and other ancient writers on rural affairs. But they may be dismissed with the general remark that they had their origin in that ignorance which confounds *signs* with *causes*, and are now disregarded, excepting by

the most illiterate and credulous. They are besides at total variance with the theory of the influence of the phases.

The agency of the moon has not been confined, in popular opinion, to the changes of weather; she has been allowed in all ages and countries to exercise a direct and important influence on organic life. Many of the opinions vulgarly entertained on this head are curious, and are founded on well established facts; the error lying, not in the observations, but in the theory which makes the moon the cause of phenomena of which she is only the silent and unconcerned spectator. We may mention one or two of the most remarkable.

"It is generally believed, especially in the neighborhood of Paris, that the moon, in certain months, has a great influence on the phenomena of vegetation. The gardeners give the name of *red moon* (*lune rousse*) to the moon which, beginning in April, becomes full either about the end of that month, or more usually in the course of May. In the months of April and May the moon, according to them, exercises a pernicious influence on the young shoots of plants. They maintain that they have observed during the night, when the sky is clear, the leaves and buds exposed to this light to become red, that is to say, to be frozen, although the thermometer, in the free atmosphere, stood several degrees above the freezing point. They also assert, that if the rays of the moon are intercepted by clouds, and thereby prevented from reaching the plants, the same effects do not take place, under circumstances perfectly similar in other respects with regard to temperature. These phenomena seem to indicate that the light of our satellite is endowed with a certain frigorific influence; yet, on directing the most powerful burning glass or the largest reflectors towards the moon, and placing the most delicate thermometers in their foci, no effect has ever been observed which could justify so singular a conclusion. Hence with philosophers the effects of the April moon are now referred to the class of vulgar prejudices, while the gardeners remain convinced of the accuracy of their observations. A beautiful discovery made some years ago, by Dr. Wells, will enable us, I think, to reconcile two opinions in appearance so contradictory.

"No one had supposed, before Dr. Wells, that terrestrial substances, excepting in the case of a very rapid evaporation, may acquire during the night, a different temperature from that of the surrounding air. This important fact is now well ascertained. On placing little masses of cotton, down, &c. in the open air, it is frequently observed they acquire a temperature of six, seven, or even eight centigrade degrees below that of the surrounding atmosphere. The same is the case with vegetables. We cannot therefore judge of the degree of cold with which a plant is affected during the night by the indications of a thermometer suspended in the free atmosphere: *the plant may be strongly frozen, although the air remains constantly several degrees above the freezing point.* These differences of temperature between solid bodies and the atmosphere only rise to six, seven or eight degrees of the centesimal thermometer, when the sky is perfectly clear. If the sky is clouded, they become insensible.

"It is now necessary to point out the connection between these phenomena and the opinions of the country people regarding the April moon.

"In the nights of April and May the temperature of the atmosphere is frequently only 4, 5, or 6 centigrade degrees above zero. When this happens, plants exposed to the moon,—*that is to say, to a clear sky,*—may be frozen, notwithstanding the indications of the thermometer. If the moon, on the contrary, does not shine—in short, if the sky is cloudy, the temperature of the plants does not fall below that of the atmosphere, and they will consequently not be frozen unless the thermometer indicates zero. It is therefore quite true, as the gardeners pretend, that under thermometrical circumstances precisely alike, a plant may be

frozen or not, according as the moon may be visible or concealed behind clouds. If they are deceived, it is only in their conclusion, in attributing the effect to the light of the moon. The moon's light is, in this case, only the index of a clear atmosphere; it is only in consequence of the clearness of the sky, that the nocturnal congelation of plants takes place; the moon contributes to the effect in no way whatever; although she were hid under the horizon the effect would not be different."

The explanation here given is perfectly satisfactory, and may be extended to some other notions that have prevailed respecting the lunar influence. For example, it is said by Pliny and Plutarch, and is at the present day generally believed in the West Indies that the moon sheds a copious humidity on bodies exposed to her rays, and that her light hastens the putrefaction of animal substances. This opinion is, to a certain extent, countenanced by facts.

"A body exposed to the light of the moon,—*that is to say, to a clear sky,*—becomes, in consequence of its radiation, colder than the surrounding air. Under these circumstances the air deposits a portion of its humidity on the cold surface of the body, which is neither more nor less than the phenomenon of dew, as analysed by Doctor Wells.—Now, animal substances become much sooner putrid when moist than when dry. The observation of Pliny and Plutarch is therefore correct in all its details. It was only necessary to reform the theory, and acquit the moon of the mischief ascribed to her."

Again, it is a commonly received opinion that the light of the moon darkens the complexion. If such an effect is produced by exposure to the moon's rays, its explanation must be sought far elsewhere than in the action of the lunar light, as is demonstrated by the following fact.

"Of all known substances, the chloride of silver is that of which the color suffers the greatest and most rapid change on exposure to light. But a plate of this chemical compound; exposed for a long time to the light of the moon condensed in the focus of a powerful burning glass, is observed to lose nothing of its primitive whiteness."

Nevertheless, the popular opinion is perhaps not altogether destitute of foundation. The skin exposed to the light of the moon,—that is, to a clear sky,—probably acquires, like dead substances, placed in the same circumstances, a temperature several degrees below that of the surrounding air. It is true that the animal heat is incessantly repairing the deficit occasioned by radiation; yet "who would affirm that the physical conditions under which an intense local cold places the epidermis may not alter its texture and modify its shade?"

We shall conclude our extracts, with the following striking passage, from which it might almost be inferred that M. Arago himself is inclined to allow the moon to retain a portion at least of that influence she has been so long supposed to possess in the affairs of the terrestrial world.

"Hippocrates had so lively a faith in the influence of the stars on animated beings, and on their maladies, that he very expressly recommends not to trust physicians who are ignorant of astronomy. The moon, however, according to him, only acted a secondary part; the preponderating stars were the Pleiades, Arcturus, and Procyon.

"Galen showed himself, in this respect, a zealous disciple of Hippocrates, but it was the moon to which he assigned the chief influence. Thus the famous critical days in diseases—that is to say, the 7th, the 11th, and the 21st, were connected with the duration of the principal phases of our satellite, and the lunar influx became the principal pivot of the system of crises."

"With regard to the theory of lunar influence on disease, it still counts a goodly number of partisans. In truth, I know not if the circumstance ought to astonish us. Is it not something to have on one's side

the authority of the two greatest physicians of antiquity; and among the moderns, that of Mead, Hoffman, and Sauvage? Authorities, I admit, are of little weight in matters of science, in the face of positive facts; but it is necessary that these facts exist, that they have been subjected to severe examination, that they have been skillfully grouped, with a view to extract from them the truths they conceal. Now, has this procedure been adopted with regard to the lunar influences? Where do we find them refuted by such arguments as science would acknowledge? He who ventures to treat, *a priori*, a fact as absurd, wants prudence. He has not reflected on the numerous errors he would have committed with regard to modern discoveries. I ask, for example, if there can be any thing in the world more bizarre, more incredible, more inadmissible, than the discovery of Jenner? Well, the bizarre, the incredible, the inadmissible, is found to be true; and the preservative against the small pox is by unanimous consent, to be sought for in the little pustule that appears in the udder of the cow. I address these short reflections to those who may think that in this article I have taken an unnecessary trouble."

(From the National Intelligencer.)

PUBLIC SPIRIT.—STEAM MILL.

Leonardtown, Md. July 17, 1853.

Yesterday, a large number of planters and farmers and other citizens in the vicinity of this place, attended to witness the starting of Mr. H. G. S. KEY's steam mill, just completed. A general invitation had been given, and it was gratifying to see the warm interest taken in behalf of this new experiment—it being the only steam mill erected in any of the lower counties of the Western Shore of Maryland, or on the waters of the Potomac river, below the District of Columbia. At three o'clock, P. M. the hour appointed for starting the engine, Governor THOMAS, who had politely attended on the occasion, threw in the first handful of grain, expressing his anxious wishes for the success of the enterprise, and his confident belief of the public advantage to result from it; and at the same moment, the signal being given, the machinery commenced its works in beautiful style, evincing perfect harmony in all their parts, to the admiration of the numerous spectators. The whole arrangement of the establishment does credit to the enterprising projector, and the execution to his efficient and industrious workmen.

This manufactory is destined to be of incalculable benefit to the surrounding country, either on the Maryland or Virginia shore of the Potomac. Its location is at Leonardtown, a thriving, prosperous village, immediately on Britain's bay, a few miles from Blackstones island, with navigable water for steamboats and bay craft up to a wharf about to be built at the door.

Thus an opportunity will be offered to the planters and farmers of supplying themselves with fresh flour, meal and plaster, of unadulterated quality, as none other will be ground, upon the most favorable terms.

The consequent improvement of lands adapted to its application, by the free use of plaster, should stimulate the agriculturists of St. Mary's and Charles, at least, to avail themselves of the proffered advantages; for in all those lands where good and genuine plaster has been judiciously used, it has proved efficacious. The writer of this is a witness to its beneficial effects upon high, upon low land, as well as upon river bottoms, whether of salt or fresh water. That the furthest of those counties are peculiarly adapted to its beneficial effects has been attested by frequent experiments. Let none then doubt until after fair and patient trial. It is understood that wheat, rye, and corn will be received; and flour, meal and plaster, delivered with the least possible delay.

When the mill had been in operation a sufficient time for all present to examine the machinery, the work done, &c. the company (amongst whom were a

number of ladies, whose *laudible curiosity* had induced them to grace the mill with their presence, which prompted unnumberable applications, from the *bachelors* in waiting, for the station of *mill*, believing that if such were to be the *custom* there would be no danger of starving) were invited to partake of refreshments which had been liberally provided by the hospitable landlord; after which a few remarks were made by Col JENNER, commemorative of the occasion, and deservedly complimentary to the enterprising proprietor. The company dispersed with gratified feelings. How much more so than if they had been called together to witness the pickerings of political contest, is for those to appreciate who enjoyed them. The thanks of all who were present are due to Mr. KEY, as well as the community who will be benefited by his enterprise. That he may be abundantly remunerated for his large investment, indefatigable industry, and public spirit, is anxiously desired by

ARATOR.

Prices Current in New York, July 27.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, .15 a 17½; Upland, .14 a 17; Alabama, .14 a 17. *Cotton Bagging*, Hemp, yd. .13 a .21½; Flax, .11 a .15. *Flax*, American 8½ a 9. *Flaxseed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a 5.62; Canal, 5.56 a 5.75; Balt. How'd st. 6.12 a 6.25; Rhd city mills, — a —; country, 6.00 a 6.12; Alexand'a, 6.00 a —; Fredericksburg, 5.87 a —; Petersburg, 5.87 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.75 a —, per hhd. 17.00 a —. *Grain*, Wheat, North, 1.18 a —; Vir. — a —; Rye, North, .80 a —; Corn, Yel. North, .74 a .75. *Barley*, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; *Provisions*, Beef, mess, 10.25 a 10.75; prime, 6.00 a 6.25; cargo, — a —; Pork, mess, bbl. 14.50 a 15.50, prime, 11.50 a 11.75; Lard, .9 a .10½.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, twenty months old, sired by Bolivar, out of a first rate imported cow. Price \$200.
One full blood bull, two years old—a very fine animal. Price \$250.
One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.
One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.
One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.
One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.
Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

I. I. HITCHCOCK.

Amer. Far. Establishment.

A BULL,

One year old, sired by Bolivar, out of a very deep milker of fifteen-sixteenths Durham blood, (consequently he lacks but one-thirty-second part of being full blooded,) will be sold for \$150. Inquire of

I. I. HITCHCOCK,

American Farmer Establishment.

EARLY YORK CABBAGE,

And all other GARDEN SEEDS, suitable for fall sowing, are for sale at the American Farmer Seed Store, by

I. I. HITCHCOCK.

WANTED, A BAKEWELL RAM,

One year old or more, for which a fair price will be paid. Inquire of

I. I. HITCHCOCK,
American Farmer Establishment.

BUCK WHEAT.

A few bushels of very superior quality for seed, for sale at the American Farmer Establishment, at \$1.25 per bushel.
I. I. HITCHCOCK.
N. B. Half a bushel is required to seed an acre.

A DEVON BULL.

Six years old, a first rate animal in every respect, for sale low. He is believed to be decidedly the best animal of the kind in Maryland. Price \$200.
Address
I. I. HITCHCOCK,
American Farmer Establishment.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep. The stock now on hand for sale, is the following:
Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.
About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address
I. I. HITCHCOCK,
American Farmer Establishment.

TALL MEADOW OAT GRASS SEED.

Just received at the American Farmer Establishment, 100 bushels Tall Meadow Oat Grass Seed, of first quality, just harvested and for sale, at \$2.50 per bushel, by
I. I. HITCHCOCK

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.

TURNIP SEED, BUCKWHEAT, &c.

400 lbs. White Flat and Red Top Turnip Seed.

100 lbs. Ruta Baga or Swedish do do

The above is of the present years' growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Locust Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given.

July 13.

SINCLAIR & MOORE.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by
I. I. HITCHCOCK,
American Farmer Establishment.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—Fresh ground flour continues to maintain its former price; the business in Howard street, however, is principally confined to retailing. The wagon price is \$6.00, with occasional variations in favor of favorite brands. Wheat has declined a little, in consequence of the increased supply of new wheat.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 440 hlds. Md.; 108 hlds. Ohio; and 3 hlds. Penn.—total 551 hlds.

FLOUR—best white wheat family \$6.75 a 7.25; super; Howard-street, 6.12½ a 6.25; city mills, 6.25 a 6.50—city mills extra 6.50 a —;—CORN MEAL bbl 3 62½;—GRAIN, new red wheat, 1.15 a 1.20; white do 1.25 a 1.30 —CORN, white, 62 a 63, yellow, 64 a 65;—LVE, 65 a 67 —OATS, 28 a 31.—BEANS, 75 a 80—PEAS, 65 a 70—CLOVER-SEED 8.00 a —TIMOTHY, 3.00 a —ORCHARD GRASS 3.00 a —Tall Meadow Oat Grass 2.25 a 2.50—Herd's, 1.00 a —Lucerne —a 37½ lb.—BARLEY,—FANSEED 1.37 a 1.50—COTTON Va. 12 a 13½—Low. 14 a 16½—Alab. 12 a 15—Tenn. 12 a 13; N. Car. —a —; Upland —a 16½—WHISKEY, hlds. 1st p. 26 a;—in bbls. 30 a 31½—WOOL, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 HEMP, Russia, ton, \$180 a 190; Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 38;—Plaster Paris, per ton, 4.25 a;—ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 38.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5 75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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GENERAL

Agricultural and Horticultural Establishment:

COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

☞ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

☞ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, AUGUST 9, 1833.

PRICES OF WHEAT, &c. We often hear complaints from farmers of unfair dealing by millers and purchasers of wheat and other grain. The *Easton Gazette* recently contained a long article on the subject. It may well be supposed that we should look at this question with an eye peculiarly single to the interest of the farmers. Indeed we have been deeply impressed with the idea that merchants and millers did take advantage of a full supply of wheat to reduce the price to a degree not warranted by the price of flour. But we have changed our mind. After a long and intimate acquaintance with the dealers in grain and flour, and after much observation, we have satisfied ourselves that no undue advantage is or can be taken of the farmers. Like all other branches of the mercantile profession, dealers in wheat do purchase as cheap as they can, and sell as high as they can.—But in an open market, subject to all the operations of spirited competition and enterprize, among some hundred dealers, the idea of a combination to purchase wheat at a rate uncalled for by the price of flour, is out of the question.—We have seen millers give a price for wheat in a time of scarcity that they knew could not be made out of the flour; but being under the necessity of having the flour, they were obliged to purchase the wheat at any price. We have also seen them refuse to buy wheat at a dollar and twenty cents a bushel, when they were asking \$6 per barrel for flour. Now here are two extreme cases. In times of a scarcity of wheat, millers must have enough to supply their orders, let it cost what it will; and they are then obliged to pay too much for it. But when "the harvest is ended," and every body is sending his wheat to market, the supply very soon gets above the demand. It is at this time that the transactions occur of which the farmers complain; and we think we can explain away all cause of such complaints.

It is true that at this time the price of wheat, and that of flour bear no proportion to each other. Flour will be selling at \$6, we will say, and the price of wheat will be only \$1 a 1.10. Now for the cause. At this same season the exportation of flour is very trifling, and there is nothing but a retail demand. It will not do to grind up large quantities of flour in the hot season to await any future demand for exportation; neither will it do to lay up large stores of wheat at prices equal to the present proportionate price of flour; for, just as soon as millers may safely grind large quantities of flour, the price of it declines. The only chance there is for a safe investment in wheat, at a price proportionate to the present price of flour at this season, is the possibility of a favorable change in some foreign market—a chance that every body must admit to be entirely too uncertain to authorise such investment of money. If millers had a reasonable certainty that they would obtain the price for the flour they make from the wheat, that such flour is now selling for, most certainly they would give the proportionate price for the wheat. And this is a contingency not within the control of the millers or any other set of men. The present state of trade has reduced all branches of commerce to the minimum rate of profit; and therefore, if wheat was reduced in price, materially below what was required by the price and demand for flour, present and prospective, persons enough, other than ordinary dealers, would be found to step into the trade, and speculation would speedily advance the price to its maximum rate. Does any one suppose that a cargo of wheat could be brought into open market in Baltimore, and be purchased by any dealer or set of dealers, at any material reduction from the price required by the state of the flour market? If such a supposition exists in any mind it may as well be dismissed, for the reader may be assured, that the spirit of competition allows of no such transaction.

There is one remedy that farmers can always command for any such grievance, real or supposed; and, that is, they can *time* their marketing better. If they would hold on to their wheat until the cool weather, they would then be able to come to market during the press of the demand for flour for exportation. We do not say, that they would then get better prices than they now get, but that they would then get a price fully proportionate to that of flour.

We are not sure that we have succeeded in the attempt to explain away the cause of complaint. It is a matter extremely hard to comprehend in all its bearings. But, of one thing our readers may be assured, and that is, that if we were satisfied that any undue advantage was taken of them in this matter, we should be the first to expose the transaction. Let them rest satisfied, that the spirit of trade will always compel dealers to pay fair prices for all articles of necessity.

NEW PLOUGH.—The *Courier des Etats Unis* contains an article from a French paper, giving an account of the invention of a new plough by a farmer of the name of Grange, at Harol in the department of Vosges. No particular description is given of the instrument itself; but the prefect of the department, in a communication addressed to an agricultural academy, speaks of it in terms of great admiration, and applauds the disinterestedness of the inventor, who declined taking a patent.—Mr. Grange says, that having been compelled from infancy to labor for many years with a plough drawn by six horses, on a soil abounding with stones, he was induced to attempt to introduce some improvement, which would enable him, with less effort, to preserve a proper direction in the furrow, which he had found impossible as it was then constructed. After having succeeded to his own satisfaction, a trial of his invention was made in the presence of the committees of four agricultural societies, and of a great throng of people. The plough, without being held or touched by any one, except at the commencement of a new furrow, preserved its direction perfectly, turning out regular and uniform furrows. It was drawn by four horses. With the plough of the country, says the prefect, twelve horses could not have done the work with the same expedition and success.

CULTURE OF SILK.—Public attention in this country appears latterly to be turning, to an extent hitherto unequalled, towards the interesting, and important subject of raising silk. We are gratified to perceive this, because, from the few experiments that have already been made, we believe it has been fully proved that silk may be made here, equal, if not superior in quality, to that produced in any other part of the world, and with equal facility. A gentleman of this village, in a highly commendable spirit of enterprize, has recently procured and planted out a quantity of Mulberry trees, and brought from Connecticut a parcel of silkworms, for the purpose of showing to our farmers how easily and cheaply they may produce their own silk, as well as make the article a profitable commodity for market; and also with a view of ultimately extending the business himself. These worms, we understand, he has divided with a farmer of Macedon, who has a young mulberry orchard, and intends to make the article of silk one of the staple products of his farm.

Among the anecdotes we have heard related by the gentleman above alluded to, (who is himself a yankee, as might be easily guessed,) since his recent return from the "land of inventions," by way of illustrating the great profits that may be derived from this business of raising silk. We will mention the following, which is peculiarly characteristic of what is not inaptly termed "yankee enterprise."—And what renders the story more interesting, is the fact that the speculator was a young lady. In one of the towns of Connecticut, somewhat remote from the silk districts, a farmer in moderate circumstances owns a small mulberry orchard, which was left to him by his father,

who died a few years since, before the same had become old enough for use. It had been entirely neglected, until during the last season, when it was discovered by, and attracted the attention of a young lady from Mansfield, a town already considerably distinguished for its rich productions of silk, who applied to the owner for the use of it for that season. A bargain was finally concluded, upon the terms proposed by the fair applicant—the business to be conducted on shares—she to bring her worms from Mansfield, and do all the work, and the owner of the mulberry trees to have one-half of the product. At the proper period the necessary fixtures were arranged, the worms hatched, and operations commenced. During the first three weeks the worms requiring only a small share of her time, she contrived to "change work" with several of the families in the neighborhood, arranging her bargains so as to have the work returned when she might require assistance—providing also for her board during the time it would be necessary for her to remain in the place. In this way she managed to accomplish the whole enterprize without any expense out, and at the expiration of six or seven weeks she had produced 54 lbs. of raw silk, worth in cash \$1 per lb. which being divided according to contract, left her share 27 lbs. She thus acquired for her month and a half's services a net proceed of \$105.—*Palmira Sentinel*.

[The above anecdote is incorrect. The young lady may have produced cocoons enough to make 54 lbs. raw silk in the time stated; but she could not have reeled them, and thus "produced 54 lbs. of raw silk." It is a good day's work to reel one pound of raw silk a day, and thus it would have required more than the "six or seven weeks" to reel the 54 lbs. to say nothing of the six weeks which it required to produce the cocoons. Notwithstanding the error above noticed, however, it will be perceived that the young lady made a very handsome job of it. Allowing her forty-two days for producing the cocoons, (six weeks,) and two months for reeling them into raw silk, she made more than a dollar a day by it, with all the disadvantages attending an itinerant establishment. Had she possessed mulberry trees at home, and been prepared with proper fixtures and help, she would have doubled the above result.—*Ed. Amer. Farmer*.]

SILK MANUFACTURE.—One of the most gratifying exhibitions we ever witnessed is that of the silkworm in all its stages, with the mulberry leaves, eggs, cocoons, chrysalis, miller, &c. together with a complete domestic process of manufacture, which may be seen at the Agricultural Warehouse, North Market st. Boston. The machine which is there in motion was invented last winter by Mr. Adam Brooks, of Scituate, Mass. and a patent of it, which we have seen, was issued on the late 29th June. It is an improvement, as it seems to us, of vast importance; for unlike the Piedmontese wheel, heretofore chiefly used, which only performed the reeling process, it combines the reeling and twisting; and the saving in labor is such in consequence, that one hundred and fifty skeins can be made in a day by one woman and a little girl to turn this improved wheel, as easily as forty can by the old.—This we learn from those who have tried both. One of the new machines is used in Connecticut, and another in New York, besides those in the family of the ingenious inventor, who now devote their time in a great measure to this business.

Mr. B. is one of the Society of Friends. His wife, who superintends the wheel, and has paid some attention to silk making for several years, had made frequent complaints of the labor lost by the old machine. Her husband doubted the practicability of amending it, and told her so in plain terms; but went to thinking, it seems, and in about three weeks produced this capital improvement. Mrs. B. says it was formerly a very hard day's work to make thirty skeins: she can now make one hundred in ordinary hours.

[*Boston Mercantile Journal*.]

AGRICULTURE.

(From the (Edinburg) Farmer's Magazine.)

ON THE MANAGEMENT OF HAY.

MEMBERS, EDITORS:

If you think the following observations on the management of *hay* deserving of notice, they may be inserted in your next number.

The treatment of *hay* is a subject of high importance to the agricultural interest of Britain, not only as a valuable article of produce, but as constituting a bulky and essential part of the food of our domestic animals, upon which their health and usefulness in a great measure depend.

Where such a valuable interest is at stake, we might naturally expect to see experiments made, and a suitable degree of attention paid, to form a regular system of management. It is much to be regretted, that in many parts of the island, no such attention has been paid; and the treatment, especially in many parts of North Britain, is slovenly in the extreme, and very ill calculated to secure and preserve, in the highest degree of perfection, that flavor, and those nourishing qualities, without which, neither hay, nor indeed any description of herbage, can be valuable.

The first consideration in the treatment of hay, is the period at which it should be cut, and the weather most proper for that operation. The time most proper for cutting the different kinds of grain, together with every step of the after-management, are points well understood, and for the most part strictly observed, by every farmer being sensible, that any neglect of,

deviation from these rules, will, by impairing the quality both of the grain and straw, be productive of much trouble and loss to himself. It is somewhat surprising, that the same kind of reasoning should not have been applied to the management of hay; as any diminution of its value, arising from improper treatment, must be equally prejudicial both to the grower and consumer of that article, as to the grower and consumer of grain.

The practice of many farmers in North Britain is, to allow their hay, not only to attain its ultimate growth, but even to make some progress towards decay, before it is cut: to obtain a bulky crop, being their chief object, every other consideration is disregarded; and neither the period of growth at which the cutting ought to commence, the weather most proper for that operation, nor indeed any step of the after-management, are regulated by first rules. In place of cutting the crop during dry weather, and when it is free from every other but its own natural moisture, it is very often cut in a wet state, and on that account must remain in the swarth a considerable time before it is fit for being put into cocks, during which it requires to be frequently turned and exposed to the sun and atmosphere, for the purpose of drying it: in that way, a considerable proportion of its natural juices are dissipated; and by the time it is dry enough for putting into the stack, it has lost not only its flavor, but a great part of its most valuable properties; an evil that is farther increased, if much rain happen to fall either immediately after the cutting, or at any period before it is put into cocks. In that case, a still greater loss of its nourishing properties, and a consequent diminution of its value, must happen.

The consequences of this management are felt in a variety of shapes, in every district where it prevails. In the lower districts, the mischief is comparatively small, owing to the mildness of the winters, the great quantity of rich faggage every where to be met with, and the abundance of corn straw, and other wholesome articles of food, with which these parts abound. In the hilly and upland districts, however, the case is very different; and the loss arising from the neglect and mismanagement of their hay is great, almost beyond calculation. In those elevated regions, the winters are, for the most part, of uncommon length

and severity; little straw is produced; sown grasses, turnips, and potatoes, are equally scarce. In that way, the chief dependence of the farmer, for winter food to his stock, falls upon the hay, which, when the quality is bad, and other articles scarce, induces debility and disease to such a degree, that a great part of the stock either die, or are reduced to a state of extreme weakness during the winter; and when the spring arrives, the green food has such an effect upon the bowels of those who have survived, that many of them die also.

The greatest part of the hay grown in these parts, is the produce of the wet swampy grounds, and the plants of which it consists, are of a nature that requires much judgment and attention to cure, in such a manner as to unite every advantage that might be expected from their use. When cut at a certain period of their growth, there is perhaps no species of herbage sweeter or more tender, or that contains more nourishing juices, or is more palatable to the animals fed with it, than meadow hay. It has already been observed, that, under the present system of management, the period most proper for cutting hay, is less an object of attention than it ought to be. Experience proves, that the greatest perfection of the herbage is met with, either immediately before it comes into flower, or as soon as the first flowers blow. At that period, it is in no shape exhausted, either by blowing a multitude of flowers, or forming seeds, and contains all the useful qualities of which its nature is capable: after that period, it daily diminishes in value, becomes tough, sapless, and unpalatable, and is not chewed without considerable difficulty. This rule applies to every species of herbage that is meant to be dried for winter food; but to coarse hay, the produce of wet or marshy grounds, it is strongly applicable; for, as we have already observed, most of the plants which grow in these situations, when they are in full vigor, are as tender, and contain perhaps as great a proportion of nourishing juices, as any other description of hay; and when cut at that stage, and properly managed afterwards, form a valuable article of food both for sheep and cattle; but when the cutting is delayed, as indeed it very often is, till an advanced period of the season, when the plants have not only reached their ultimate growth, but begun to decay, this description of herbage becomes at once the coarsest and least nourishing of all food.

This opinion does not proceed upon theory, but upon the solid ground of experiments carefully made upon many different kinds of herbage, at different periods of their growth, the result of which establishes a fact that cannot be too generally known, viz. that plants of all sorts, if they are cut when in full vigor, and afterwards carefully dried, without any waste of their natural juices, either by bleaching with rain, or exhalation contain, weight for weight, a quantity of nourishing matter nearly double what they do, when allowed to attain their full growth, and make some progress towards decay.

Hay of all kinds should certainly be cut at the period we have mentioned, and, if possible, during dry weather; and, in place of being suffered to remain in the swarth for days, as is commonly done, women with forks or rakes should follow the cutters, and spread it in such a manner as to allow the sun and air free access to the whole. If this operation is properly performed, and the weather favorable, the hay that was cut in the morning will be ready to put into small cocks by midday, where it may remain for two or three days; at the end of which, if the weather is dry, they may be thrown down early in the morning, and, after being exposed to the sun and atmosphere for a few hours, put up into ricks of at least forty or fifty stones each, where it may remain with perfect safety, till it is convenient to stack it. By such treatment, every valuable quality is preserved, the hay is of a fine green color, and possesses so agreeable a flavor, that the animals eat it with the greatest relish. Before stacking, some attention will be necessary to

render the whole as uniformly dry as possible, especially if much rain has fallen, and the wind continued for any considerable time in one quarter after the hay has been put into ricks; when that is the case, one side will be found damp, while that which is exposed to the wind is perfectly dry; the remedy consists in turning the ricks round, which is done with great ease, by placing six or eight people, at equal distances, round the rick, with directions to thrust their hands as far as they can under the bottom, at the same time grasping a handful of the hay;—when the whole are ready, let them lift at once, and move round in the direction intended, till the damp side is opposed to the wind: in that way, ricks of fifty or sixty stones may be turned with ease and expedition, and the whole rendered uniformly dry in a short time.

It has been contended by many, that there is no great necessity for being so solicitous to have hay thoroughly dry before it is put into the stack, as it will keep perfectly well even with a considerable proportion of moisture; and, should any apprehension be entertained to the contrary, all danger will be prevented, by mixing it with salt; a practice strenuously recommended by many intelligent writers.

Trials carefully made, and upon a scale so extensive as to occasion very considerable loss to those concerned, prove, beyond a doubt, that the addition of salt to damp hay is no preservative against its heating; on the contrary, if moist weather follow immediately after it is put into the stack, the addition of salt, in place of being useful, will prove hurtful; it being a well established fact, that salt, and every thing impregnated therewith, greedily attracts the moisture of the atmosphere, and occasions a degree of dampness that would not otherwise have taken place.—The experience of persons who build houses with stones taken from the bed of the sea, is an undeniable proof of this; as the walls of such buildings are always damp and uncomfortable, even if they should stand for centuries: have we any reason to suppose that the case will be different when salt is mixed with hay? Either in a damp or dry state, if it is put into the stack damp, the salt will very effectually prevent its farther progress in drying, with this disagreeable addition, that if wet weather follows, the salt, by attracting an additional quantity of moisture will increase the evil.

The case is not materially different, when salt is mixed with even the driest hay, especially in situations where the climate is moist, and the winters long; for, if the quantity of salt employed is considerable, the continual attraction from the atmosphere during the winter months, if it does not destroy it entirely, will at least have the effect of rendering it musty and unpalatable.

But though we thus disapprove the practice of salting hay when it is put into the stack, whether in a moist or dry state, there is every reason to believe, that it will be highly salutary and useful, if applied with judgment at a subsequent period. The beneficial effects of meadows or marshes that have been overflowed with salt water, upon the health of sheep and cattle, and the high relish they have for such pastures, are well known; the preference given by the animals is strong and decided: is there any reason to suppose that an equal preference would not be given to hay tinged with salt?

In bad seasons, when hay has been much injured by the weather, it is not only tasteless, but disagreeable to the animals in the spring, when it is only from necessity. When that is the case, it becomes an object to mix with it any article that can remedy these defects; for that purpose, nothing is better calculated than salt, which, along with its giving the hay an agreeable taste, has a medicinal effect upon the bowels of the animals; a matter at present too much neglected, while they are feeding upon dry food. The most proper time for applying the salt, seems to be a day or two before the hay is used. At that time, a quantity sufficient for two days' consumption should be ta-

ken from the stack, and laid either in a shed or barn; a thin stratum should first be spread upon the floor, and lightly sprinkled with water from the rose of a watering pan; a small quantity of salt should then be equally scattered upon it; after which another stratum of hay should be added; and the same operations of watering and salting repeated, till the whole quantity is gone through; it should then be well turned and mixed with a fork, and allowed to remain in a heap for one night; after which, it will be fit for use.

It is necessary to observe, that the quantity of water applied should never exceed what is necessary to damp the hay; and the proportion of salt should be confined to what will give it an agreeable flavor: a superabundance of either, in place of being useful, defeats the purpose for which they are applied. If there is too much water, it runs off, carrying the salt along with it; if too much salt, it renders the hay bitter. The salt made use of should be of the smallest kind, for the purpose of sprinkling it equally; and every possible means should be taken to prevent one part of the hay from getting more than another.

It is worthy of notice, that though the salting of hay a day or two before it is used, is in general attended with advantages, we beg leave to be understood as meaning only the coarsest kinds, or such as may have been injured by the weather; for, in every instance where it has been cut at the proper season, and well managed afterwards, the taste and flavor will be such as to recommend it to the animals, without any addition whatever: but in unfavorable years, when the quality is much impaired by the weather, especially if the hay is coarse, and treated in the manner commonly practised in the hilly and upland parts of the country, the operation of watering, with the addition of salt, will, by softening and giving it an agreeable taste, induce the animals to eat it with advantage, in many instances when it would otherwise be rejected. It is perhaps in such cases only, that salt can be useful, unless it be meant as a medicine; and it is very apparent, that the hint of using salt at all, originated in the preference given to salt marshes over other pastures, by both sheep and cattle.

In treating of an article of such value and importance as hay, it is worth while to inquire, what are the most advantageous and economical modes of using it.

Every good farmer is now sensible, that when any considerable quantity either of hay or other fodder is given to horses, sheep, or cattle, at once, the effect of their breath blowing upon it, joined to other causes, renders it so disagreeable, that they soon loathe and refuse to eat it; in that way a considerable part of it is lost. On the contrary, when it is given frequently and in small quantity, it contracts no disagreeable smell, and the animals eat up the whole. Farmers of a certain description will no doubt object to this mode of feeding, on account of the trouble with which it is attended. With them, it is a maxim, that if the animals are fed once or at most twice, in the twenty-four hours, it is sufficient; and that if they are hungry, they run no risk of starving, while they have food so near them. They do not, however, reflect upon the injury which the fodder, thus used, sustains by being breathed and trod upon, and impregnated with dung and urine. Let such men consider, for a moment, how they would relish the remains of their dinner served up for supper, after being kept within a yard of their nose during the interval, upon the same plates, with the same knives and forks, without any washing or cleaning. There are few people, indeed, who would not nauseate and reject such a meal.

The case cannot be very different with any of our domestic animals, when they have a quantity of hay or other fodder given them, sufficient for a whole day's consumption; having it constantly in their sight, and being blown and trod upon, impregnated with urine and otherwise injured, it becomes loathsome beyond description; and in place of being eat up, which

it always is when small quantities are given at a time, and frequently repeated, a great part is rejected. It ought therefore to be a rule with all farmers, to give little at a time, and repeat it frequently, always taking care that what was last given shall be consumed, before they receive an additional supply. By such management, no part of the fodder will be lost, and the animals will at the same time derive more benefit from the use of it.

Another economical practice remains to be mentioned, namely, the mixing of straw with hay. From many trials in different parts of the country, it appears, that where good straw can be had in plenty, it may be mixed with hay to great advantage. Some farmers are in the habit of mixing straw with cutting grass, the benefit of which will be afterwards noticed. When straw is mixed with hay, the process of curing may be accelerated, and the quality of the hay, at the same time, improved, by leading out the straw to the field, mixing it intimately with the hay immediately after it is cut, and putting the whole into small hand cocks, as soon as it is mixed. It is well known, that when moist and dry bodies are brought into contact, the former begin to give out a part of their moisture, which is as greedily absorbed by the latter, and continues to be so till a balance is established between them; or, in other words, till both contain an equal proportion of humidity. This is precisely what happens when dry straw is mixed with green herbage. Immediately after they are laid together, the straw begins to absorb a part of the juices, and continues to do so as long as the grass will part with any. In that way, every part of the natural juices is effectually preserved; and the straw, from the absorption of what would otherwise have been either evaporated by the sun, or washed away by the rain, is rendered nearly equal in value to the hay. Where this practice is followed, and due pains taken in the mixing, very little exposure to the sun or atmosphere is necessary, and the hay will be fit for putting into the stack in half the time that is required where no straw is used.

In place of leading out the straw to the field, it is customary, in some parts of the country, to mix it with the hay in the stack, by laying alternately strata of each; a practice that answers pretty well, but is much inferior to that above recommended. It may, however, be very useful in unfavorable seasons, and be the means of preserving hay that could not be cured otherwise.

When straw is mixed with grass for present use, a quantity sufficient for several days' consumption should be cut at once, and after mixing, laid up in pretty large heaps, and allowed to remain in that state for a couple of days at least; at the end of which, the straw will be found much softened and impregnated with the juices of the grass. When a fair trial is given to this practice, several advantages will be found to arise from it. The first is, the conversion of a considerable quantity of straw, which would otherwise have been of little value, into a wholesome and nourishing article of food; the second, that grass so mixed, has not that purgative quality it is known to possess in its simple state, and seems to keep the bowels in a medium state, preventing alike the extremes of scouring and costiveness, circumstances of much importance to the health and strength of the animals.

It has been recommended, and to a certain extent practised by some farmers, to mix old and new hay. Upon this point, we have simply to observe, that if old hay has been well got, and properly secured in the stack, it will be found for many purposes superior to the new; it certainly contains a firmer and more concentrated nourishment than new hay can possibly do; and for all animals that are employed in constant and severe exertions, it is infinitely preferable. There is a period, however, beyond which, even the best old hay will, by being excessively dried, begin to be impaired in its quality, and be eaten with much less

relish. In such cases, a mixture of new hay will be useful; as the old, by the absorption of the new juices, will recover a part of the moisture and flavor it had lost by long keeping. The same thing will happen, if the hay of the former year has been of an inferior quality, owing either to its having been allowed to stand too long before cutting, or to its being bleached with rain after it is cut. In either of these cases, the defect will be in some degree repaired, by mixing it with new juicy well-flavored herbage. A Z.

(From the Fayetteville Observer.)

GAMA GRASS.

MR. HALE: Sampson county, N. C. July 20, 1833.

When we were together, a short time since, I promised to send you some account and description of the *Gama grass*, with the result of such experiments as I had made with it.

The first notice I saw of this grass, was by Doctor Hardeman, of Missouri; whose account of its wonderful production, and valuable properties, may be found in the 8th vol. of the *American Farmer*, page 241. I considered the calculations, he made of results, visionary, and had forgotten it.

It, however, attracted the attention of Mr. James Magoffin, of Alabama, who procured some seed, and has, now, been cultivating it several years. The result of his experiments may be seen in the 13th vol. of the *American Farmer*, pages 50, 143, and 215. Also, in the 4th vol. of the *Southern Agriculturist*, pages 312 and 475.

Further experiments with this grass are detailed by Mr. Wm. Ellison, in the 4th vol. of the *Southern Agriculturist*, page 404, and the 5th vol. of the same work, page 5. To these several communications, I would refer such of your readers as have those works, for a better and more particular description of the grass, than I can give them. (N. B. Such farmers as can afford to pay the cost of the *American Farmer* and *Southern Agriculturist*, and neglect to subscribe for them, or one of them, do not deserve the benefit of any improvement or discovery in agriculture.)

The combined results of the experiments of these gentlemen show, that the quantity of hay which this grass yields, is far greater than any heretofore tried. That the quality of the hay is equal to any other; and that, both when green, and when cured, it is greedily eaten by stock of all kinds. Mr. Magoffin informs us, he has actually made at the rate of ninety tons of green hay per acre in one year—equal to between 20 and 30 tons of cured hay. Dr. Hardeman states, that a single root, covering a circle, the diameter of which was two feet, yielded at one cutting 52 lbs. of green hay, which when dried weighed 20 lbs.; and consequently, that an acre of ground, filled with roots equally productive, would yield more than 270 tons of hay. However exorbitant these accounts may appear at first, the high standing of these gentlemen leaves no room to doubt their accuracy. My own experiments induce me to believe, that under circumstances, in all regards favorable, they may be realised.

Of the immense value of this grass, to us, in a hot climate, and on a sandy soil, no doubt can exist.

I have ascertained the following facts, with certainty. That it grows spontaneously and luxuriantly, in our country, on alluvial bottom, and rotten limestone lands. I have planted it in a poor sandy loam on a clay foundation, (such as is the general quality of the stiff pine lands of our country,) and on a sand hill, originally as barren, and as arid, as the deserts of Arabia. These soils, well manured, produce it abundantly. Even the long drought of 1832 (which, with me, continued from 23d May to 1st August, with the exception of one slight rain on the 9th of July) did not materially affect its growth. It may be cut as early as the 1st of May, and the cutting repeated every 30 days, until frost. It ought to be planted in drills three feet apart, and two feet space between the roots. An

acre will then contain 7,350 roots. A single root, of the second year's growth, (on the dry sand hill,) at three cuttings, has this year already yielded 7½ lbs. of green hay, and will without doubt yield at least as much more before frost. At that rate, an acre of *pure sand hill*, well manured, would yield fifty-five tons of green hay, equal to about eighteen tons of cured hay, of a quality as good as the *best blade fodder*.

In January last, I drilled some seed, in drills two feet apart, with seed dropped at intervals of six inches, intended for transplanting next fall. The whole ground is now covered with a mass of grass 2½ feet high. On the 10th of this month I cut and weighed the product of one drill thirty-five feet long. It yielded 25 lbs. of green hay, which, when cured, produced 8 lbs. of delightful forage. At this rate, an acre would yield 15,750 lbs. of green hay at one cutting. It may yet be cut three times more, and consequently, the product would be 63,000 lbs. of green hay, from seed planted in January last. The product of old roots is from two to three fold. These seeds are planted on pine land, with a poor sandy loam on the surface, with a clay foundation—*well manured*. I have not made any experiment with this grass, on any other soils than those above specified, but I know, it grows much more luxuriantly on alluvial bottom, and rotten limestone lands.

Mr. Magoffin is *certainly mistaken*, when he supposes this grass is found *indigenous, only*, in the western prairies. He furnished me with a few seeds of his own raising. I also procured some from Mr. Ellson of South Carolina, which grew in Fairfield District, and some from Gen. Owen, which grew spontaneously on his plantation in Bladen county, in this state, on the alluvial soil of the Cape Fear.*

They are all planted near each other; and are, unquestionably, the same species of grass. There is not the least difference between that found in this state, and that from South Carolina. That sent me by Mr. Magoffin, from Alabama, is a little different in color, being of a paler hue, and of a little finer texture.

This grass is, without doubt, the "*Tripsacum*" of botanists. In Elliott's Botany of South Carolina and Georgia, vol. 2d, page 522, two varieties are described.

"1st. *Dactyloides*—Root perennial.—Stem 4 to 5 feet long.—Leaves large, 3 feet long, 1½ inch wide.—Flowers, in terminal spikes.—Spikes numerous.—Very rare—have only seen it growing on the margin of the Ogeechee river.—Flowers from May to July."

"2d. *Monostachyon*.—Root, perennial.—Stem, 3 to 5 feet long.—Leaves 1 to 3 feet long, 1 inch wide. Spike, solitary.—Flowers in terminal spikes.—Grows abundantly on the Sea islands, (particularly on Paris island,) and along the margin of the salt water.—Flowers from August to October."

For any practical purpose, there is no difference between these two varieties.—They are found growing together.

The following characteristics will render this grass obvious to common observers:

It grows in tufts or bunches, measuring about two feet across and three in height; which tufts are composed of numerous branches, springing from a common root, which is tuberous in its form for about three inches, and terminates in many small, but strong radicles. These branches, in their origin, form the common root, and have a peculiar arrangement; being produced from two opposite sides of the tuberous portion only, and departing from it at an angle in opposite directions, gives to this part of the plant a flat shape.

The leaves which (previous to the period of flowering) all issue from the root, are of a deep green

color, from two to three feet long, and from one to one and a half inch wide, are shaped like a blade of fodder, but are sawed or rough on the edges, particularly towards the point. The leaves commence in a sheath at the bottom, which incloses and covers the origin of several other interior leaves. About the last of May, a number of flower stems shoot up from different parts of the bunch, and grow from three to seven feet high, and terminate in one, two, or more finger-like appendages (called, by botanists, spikes.) The upper end of the spike, resembles a single spike of the tassal of Indian corn, and has a blossom (farina) on it. The seeds, (which vary from three to six on each spike) are imbedded immediately below this tassal, and when flowering, each has a single tag, of a deep purple color, resembling the silk of Indian corn. The tassal drops as soon as it has shed its pollen, and then the seeds ripen, one by one, and drop off. The seeds are imbedded on opposite sides of the stem, and attached together, after the manner of the rattles of a rattle-snake.

The flower stem is jointed and clothed with leaves, much shorter than those which proceed from the root, the sheaths of which embrace the stem, to within a short space of the next joint. It is channelled on alternate sides like a stalk of corn. When full grown, it puts out branches at nearly every joint, which terminate and produce seeds like the main stem.

I have been thus particular in my description, to enable persons to search out this grass. I am satisfied it will be the source of much wealth and comfort, in our *pine country* particularly. It is *certainly* the spontaneous product of our own state. I know it grows in New Hanover, Brunswick and Bladen counties, and have been informed it is found in Craven and in Orange, and may, probably, on any of our alluvial bottoms.

Now is the time to search for it. It is in bloom and more readily identified, by the peculiarity of the seed. When not in bloom, it very much resembles some other grasses which are different in their nature, and not so valuable. I might add much more regarding it, but again refer your readers to the essays above referred to.

Very respectfully, yours,

WM. B. MEARES.

(From the Farmers' Register.)

EXPERIMENT TO TEST THE POSSIBILITY OF WHEAT DEGENERATING INTO CHEAT.

October 20, 1832.

A spot about twenty feet square, on one side of a field of corn, was left out when all the adjacent ground was ploughed and sowed in wheat three days before. Soil, a silicious loam, (which had been marled in 1820,) on a retentive subsoil, which by preventing the sinking of water from rains, keeps the surface very wet through winter and spring. The surface of this part of the field is a very gentle slope, declining towards the north, and the lowest spot of the whole (and therefore the most exposed to water) is where the space was marked for this experiment. There the surface becomes level. The whole field, including this spot, had been ploughed five or six inches deep last winter for corn, and well cultivated, but not later than the beginning of July. All remained very clear of weeds.

The space was slightly smoothed by the broad hoe, merely to level the clods, but not broken any where an inch deep, and generally not cut at all. As the corn had been tilled level, and not hilled, the surface required but little smoothing. Wheat was selected for the trial which had passed through a cockle sieve, and of course was all either shrivelled, or very small grains if plump. Lines were slightly traced along the edge of a straight rod, (not more than half an inch deep,) and a few seeds, varying from three to seven, were placed accurately at every six inches of the line, by notches on the rod made at those dis-

ces. The seed was carefully cleaned of every grain of cheat, spelt, and cockle. Half the square was thus planted in such rows six inches apart, and the remainder in similar rows twelve inches apart. For fear that even this very defective seed might not be bad enough to insure the change to cheat, one of the subscribers picked out a number of the most shrivelled and imperfect grains, all of which he is confident will bring cheat, if they are capable of producing anything, which is very doubtful from their appearance. One of the rows was planted with these grains, four being carefully deposited at each distance of six inches. All the seeds were covered with about half an inch of mold taken by the hand from the intervals between the lines; and the whole space was then slightly beaten over with the flat of the broad hoe.

About four feet width adjoining the square, and of similar unbroken corn land, was strewn broadcast with similar defective seed, and covered as shallow as possible.

The earth dry at this time, and in fine order for ploughing. The weather uncommonly warm for the last three days.

Present and assisting at the making of this experiment the undersigned Thomas Cocke and Edmund Ruffin, of Prince George county, and William J. Cocke of Sussex—the first a believer and the second an unbeliever in the change of wheat to cheat, and the third undecided. It was our design in this experiment to bring into operation every cause to which this change is usually ascribed by different persons, namely, 1. imperfect seed—2. thick sowing—3. a wet soil—4. hard or unbroken soil—5. grazing or mowing, which is to be done next spring.

If any cheat or spelt, should grow in this square from any other seed, it cannot be mistaken for the product of the wheat we have planted, unless the plants should stand in one or more of the positions so accurately fixed by measured distances.

THOMAS COCKE.

EDMUND RUFFIN.

WILLIAM J. COCKE.

April 15, 1833. The growth of plants on the square is very mean, (generally six or seven inches in height,) and but few are living compared to the number of grains sown. Every row however has some plants living. Half the marked row where the worst seed was used, and as much of the one adjoining, was cut down this day, within an inch of the ground, and the parts so treated were also marked.

June 3. We again carefully examined the experiment together, to know and report the final result. Not a single head of cheat or spelt is in the whole space. The cut plants have grown as tall, and are not perceptibly worse than the balance in the same rows. The row sown with the very imperfect grains, has a still more scanty growth than the others, but had twenty-four heads of wheat in its whole length; a few of these heads had not come out of the boot, and perhaps will not produce grain—but they were opened and found to be wheat, like all the rest which were out.

The adjacent parts of the field of wheat contain a few scattering stalks of cheat, and still fewer of spelt. The seed had been well cleaned (though probably not perfectly) by the hand sieve.

THOMAS COCKE.

EDMUND RUFFIN.

Prince George Co. June 4, 1833.

(From the Virginia Farmer.)

PLANTING IRISH POTATOES.

MR. EDITOR:

Buckingham, May, 1833.

I planted a piece of ground in Irish potatoes, some of which I cut in pieces, leaving an eye to each; the others I planted whole. Those planted whole produced more than those cut, though the same quantity in weight was put in each hill.

D. G.

* A well known writer in the Newbern Spectator of the 19th inst. (H. B. C.) states that during the last year he found the Gama grass on the shore of the Neuse river, and that a gentleman in Florida assured him that he had found it in that territory.—Ed. of the Observer.

HORTICULTURE.

(From the Southern Agriculturist.)

ACCOUNT OF THE MAY EXHIBITION OF THE HORTICULTURAL SOCIETY OF CHARLSTON.

BY THE EDITOR.

The general exhibition of the Horticultural Society was held at Seyle's long room, on the 23d and 24th of last month; and although the season had by no means been favorable, yet this exhibition surpassed any thing of the kind ever witnessed here, and has given an impetus to the growing taste for horticulture, which will soon exhibit itself in the more tasteful arrangement of our gardens, and the more choice collection of beautiful and rare plants which will adorn them. Although we feel our incompetency to do any thing like justice to the splendor and beauty of this exhibition, yet we will endeavor to convey some idea of it to our readers.

On entering the room, the visiter was struck with the *tout ensemble* of the whole. Immediately in front, but at some distance, he beheld a pyramid decorated from the bottom to the top with geraniums, and many other flowering or ornamental plants; whilst the space between was occupied with tables and stands filled with the choicest flowers and plants, vying with each other in splendor and beauty. The hall is an oblong square, the door being at the western end. On each side, and near the western extremity, were two tables, on which were placed the vegetables exhibited for the premiums offered by the society. Between these was a large box, three or four feet square, containing a *Jasminum trinerve*, (sent by Mrs. Schreiber,) trained four or five feet high, on a wooden cross, over which it formed a beautiful head, somewhat in the shape of an umbrella, several feet in diameter, and covered profusely with buds. Very few of the flowers were expanded: in a week longer it would have been a most splendid sight. Passing onward, the next object which presented itself was a gigantic plant of the Prince George geranium, covered with its beautiful scarlet blossoms. On the north side, but nearer to the wall, was a large plant of the double red oleander; whilst on the south side, at an equal distance, a most beautiful plant of the purple banana waved its large and graceful leaves. Passing still onward, you beheld a large circular table, profusely decorated with bouquets of flowers; whilst in the centre, elevated on a small circular stand, was placed a jar containing a large plant of the double white oleander in bloom. Immediately in front rose a large octagonal pyramid, covered from the top to the base with beautiful flowering or ornamental plants, in jars; among which the geraniums were conspicuous, with their numerous showy flowers. On each side of the pyramid were large plants in boxes. To the east of the pyramid were two flower stands, on which were placed large vases of beautiful flowers furnished by Mrs. Bentham. To the right and left of these were two small square pyramids, containing four ranges of stages, on which were placed small plants in pots, and cut flowers in vases, formed into bouquets. Still further to the eastward, in the centre, was another large circular table, with a smaller one elevated in the centre. On these the single (cut) flowers, which were remarkable either for their rarity or beauty, were placed; whilst several very handsome vases of flowers were placed on the smaller elevation. To the north and south of this table, extended two long tables, with two ranges of stages on each side, surmounted with one in the centre. These also were filled with plants in pots and bouquets of flowers. Two stands, surmounted with large vases of cut flowers, were placed at the extreme east end of the room, and terminated the whole.

In the preceding we have endeavored to give some idea of the arrangement; but to describe the appearance of the hall when decorated with plants and

flowers, and filled with company, would require an abler pen than ours. We cannot, however, quit the subject without alluding again to some of the plants. Among those sent to the exhibition was an American aloe, just on the eve of blossoming. It had shot up its flower stem about fifteen feet high, and showed the unexpanded blossoms on many branches: a week or two longer and it would have been in full bloom.* This plant was sent from the garden of Mr. James Nicholson. It was impossible to get it in the room, owing to the winding passage, and was therefore left in the yard. This was less to be regretted, as it enabled the visitors to view it not only from the spot where it rested, but as its stem rose near the windows of the hall, to see distinctly the whole arrangement of the flowers.

The purple banana, exhibited by Mr. John Michel, was remarkable not only on account of its rarity, but also for its beauty. The variety usually seen here is the yellow; and we understand the purple is rarely to be found, even in the West Indies. It has been only after much research that Mr. Michel obtained it; and he certainly produced a very fine healthy plant, six or seven feet high, at the base of which were two young suckers, just appearing. This is the only plant in this city, and, we believe, the only one in the state—perhaps in the United States. Mr. Michel also produced the sweet guava, of a large size, and with both flowers and fruit on it.

Although the season for roses had passed, yet nine varieties of China roses, and seven varieties of sweet roses, were sent from the garden of Miss Stone. A number of very beautiful flowers were also sent from her garden, among which was the Chinese hybiscus. The bouquets were uncommonly handsome; especially those sent by Mrs. William Johnson, Mrs. Cochran, Mrs. Wagner, Mrs. Patton, and Mrs. Bentham. Very elegant bouquets were also received from Mrs. Eason, Mrs. Davis, Miss Webb, Miss Mathews and Miss Merchant.

Mrs. Hoff and Mrs. Schreiber contributed largely, especially in geraniums. Mrs. William Drayton sent a large and beautiful carnation plant in full bloom, which was much admired, and for which a premium was awarded. There were but few dahlias sent, but few being in bloom at the period: the handsomest were from the garden of Mr. James Nicholson. The society did not award a premium for these, having determined to hold an exhibition for dahlias and other flowers in September.

The vegetables exhibited were much fewer than we could have wished: in fact there was but little competition at the hall. But, by a regulation of the society, the whole market is considered as in competition: that is, if any vegetable has appeared in market, any time during the season, finer than that exhibited, no premium is awarded, although it may surpass all those exhibited. This prevents any premium being bestowed unworthily. The vegetables, however, exhibited at this time, although few, were really remarkably fine; and we do not recollect ever to have seen better, with one or two exceptions. The fact is, we are already witnessing the good effects of this society in the superior size and better condition of the vegetables; and in a few years this will be made manifest to the most superficial observer.

On the whole, we have every reason to be gratified. Our society has increased in numbers; and what is better still, the taste for horticultural pursuits is rapidly spreading throughout our city, which is shown by the eagerness with which plants are sought after by all, whether young or old, ladies or gentlemen, and by the desire which all who have even a small spot of ground evince to have it decorated with flowers and ornamental plants; while the more substantial part of the garden is frequently boasted of

and shown with pride, as possessing vegetables which would not disgrace the table of any one. This was not the case a few years ago; and from the improvement which has already taken place, we augur the happiest results. It will yet be some time before we can vie with our northern brethren in exotic plants, especially in those which are rare and costly; but we doubt not the time will come when our exhibitions will bear a comparison with their best. And why should it not? We have both the wealth and the climate, and all that is wanting is a taste for such pursuits, which is now just springing up, but which promises to produce an abundance of fruit. We subjoin the report of the standing committee, submitted to the society at their last exhibition.

"An exhibition of flowers, fruits and vegetables, took place at Mr. Seyle's on the 23d and 24th of May. The arrangements were judicious, and the general appearance of the room calculated to increase our pride and pleasure at the opportunity thus afforded, of gratifying the community, in an amusement so innocent and delightful. The exhibition brought to our view a great number as well as variety of flowers, and we therefore congratulate ourselves not only in the increased extension of Flora's reign, but in the increased skill, taste and judgment exhibited in their cultivation. Affording health and agreeable recreation, as such pursuits do—we cannot but anticipate the period when every family will present a parterre of its own, each village and rural retreat, be enlivened by the introduction of these most agreeable and pleasing inmates. The flowers of our woods, will be found to repay by their beauty and fragrance, and are as worthy of living in the poet's song as the cowslip and eglantine—our vacant lots, our cottages and farms adorned by their presence, and the traveller made to rejoice by those emblems of peace, innocence and beauty.

The exhibition of vegetables was also good, though we regret not having a greater number of competitors. Such vegetables as were presented, were fine, and good evidence of what could be done, were the necessary attention bestowed.

Of fruits—the season of the year does not afford much variety in our climate, but we were pleased with the size of the strawberries and plums presented.

The following selection has been made, as most worthy of the premiums the society has offered, for the several varieties of flowers, fruits and vegetables.

For the most beautiful flowering exotic plant—to Mr. F. Dupont, *Renalmitans* [*Alpinia nutans*]
—silver medal.

For the most beautiful flowering indigenous cultivated plant—to Mr. J. F. O'Hear, for *Hydrangea quercifolia*—silver medal.

For the most beautiful flower from an exotic hall—to Mrs. Wagner, for *Agapanthus umbellatus*, Turk's cap—silver medal.

For the most beautiful carnation—Mrs. William Drayton—silver medal.

For the most beautiful pink—Mrs. Schreiber—silver medal.

Contributors.—The society feel particularly indebted to Mrs. Cochran, Mrs. Wagner, Mrs. William Johnson, Mrs. Joseph Johnson, Mrs. E. Rutledge, Mrs. William Drayton, Mrs. Bentham, Mrs. Davis, Mrs. Hoff, Mrs. Patton, Mrs. Eason, Mrs. Schreiber, and to Misses Stone, Mathews, Webb, Craft and Merchant, for the specimens sent.

So numerous were the contributors, that it would be impossible, in the brief notice we are compelled to take of this exhibition, to award the due merit to each; yet we cannot pass by entirely some which were more conspicuous than the rest.

The American aloe, from the garden of Mr. James Nicholson, was much admired, although not fully in bloom. The dahlias, sent from the same garden, attracted much attention by their great beauty.

The purple banana, sent by Mr. J. Michel, attract-

* Notwithstanding this plant was cut off near to the ground to bring it to the exhibition, yet it has continued to grow as if it had not been removed, and is now (June 18) covered with blossoms.

ed general attention. It was a most beautiful plant, about seven feet high, and remarkable not only for its rarity, but also for its beauty. It has been obtained and reared to its present state at considerable expense both of time and money, and we hope that Mr. Michel will be rewarded by complete success. To this gentlemen the society were also indebted for the exhibition of a large plant of the *sweet guava*, with flowers and fruit. He also exhibited some beautiful specimens of the *moss rose*.

The bouquets of flowers were handsome and tastefully arranged, and it would be impossible to discriminate in favor of any, without doing injustice to the rest.

Fruits.—The premium for the finest *strawberries* was awarded to Mr. J. Michel.

For the introduction of a new fruit, to Mr. John Michel, for the *purple banana*.

Vegetables.—Twelve best roots of *parsnips*, Mr. J. A. Winthrop; twelve best roots of *salsify*, Mr. E. W. Bountheau; twelve best *kohl rabi*, Dr. H. R. Frost; twenty-five best *leeks*, Mr. E. W. Bountheau; twenty-five best *onions*, Mr. J. Mathews; best bushed *Irish potatoes*, Mr. J. F. O'Hear; twelve best *artichokes*, Mr. J. A. Winthrop; twelve best *tart rhubarb*, Mr. J. D. Lagare.

RURAL ECONOMY.

(From the Southern Agriculturist.)
ON HEDGES.

BY DR. JOSEPH JOHNSON.

Read before the Horticultural Society, of Charleston.

I beg leave to offer a few observations on hedges, or live fences.

The scarcity and cost of good materials for timber fences, has led to the practice of commencing inclosures with a ditch and bank. This practice, however proper for economy, and the preservation of the wood, is the worst that can be for the propagation of live fences. The ditch drains the adjacent earth; so as to exhaust all the moisture requisite for the nourishment and growth of the tender young cuttings or sets; and the bank, instead of supporting, impoverishes them. The chief cause of protracted growth—of difficulty and disappointment in all hedges—in all countries, is the ditch and bank.

The next great difficulty arises from the grass and weeds, which are suffered to grow with the young plants, and of course to exhaust the sustenance, more essential, at this time, to their growth; because of their having, as yet, but few and feeble roots for their support.

1st. It is, therefore, recommended to commence the planting of a live fence in October or November, when the grass ceasing to grow, would not injure the young plants for the first six or seven months.

2d. That every such hedge, should be sheltered by a fence or inclosure for three years, until the plants shall have acquired strength to support themselves, and bear the injury usual from cattle.

3d. That the ground be well prepared by ploughing or hoeing, a space at least four feet wide.

4th. That the plants or cuttings be set out from six to eight inches apart, in two rows, distant from each other about two feet. If seeds be sown, they should be nearer to each other in each trench, to allow for failures.

5th. That the weeds and grass be carefully kept down for two years, by some one no longer valuable for field labor, working with a light narrow hoe.

6th. That all hedges be plashed or wattled as soon as the plants are about five feet high.

7th. That no tree of any description, be suffered to grow within thirty feet of any hedge.

The practical advantages of fencing with the non-descript or Cherokee rose, have been forcibly presented to the public, by the late Mr. Stephen Elliott, and

Mr. R. E. Rowand. If a hedge be made of this, it will require to be trimmed freely with hoes, to prevent it from growing so thick, as to afford shelter for rabbits, rats, &c.

But I would suggest the use of other plants for hedges, some of which may be found worthy of attention, in different situations and circumstances. The daily rose (*Rosa canina*) is very easily propagated by cuttings, layers and seeds. It is a hardy, vigorous plant, and in two or three years acquires sufficient height and strength to be useful, especially if plashed as all hedges should be. It is preferable to the Cherokee rose, in this respect, that while it acquires a sufficient growth as early, it never grows beyond what is necessary, nor imposes the expense or trouble of frequent dressings. For ornament, it is, at least, equal to the other.

The pomegranate is very easily propagated from cuttings or suckers at all seasons of the year. I do not know any plant which takes root with more certainty. The wood is tough and durable, grows promptly to a sufficient height and never exceeds what is proper.

The oranges, either sour or sweet, when sowed in trenches, would acquire sufficient growth in two or three years, and no animal would be so daring, as to attempt a passage through its impenetrable barrier. In this way it would bear the frost much better, than in detached stems, and would not grow either so high or so large as when more openly and widely spread. It would probably be found in the Southern states, as useful as the well-known lime-hedges of the West Indies. The seeds of the sweet orange, may be obtained in great abundance from the decayed oranges, at the fruit shops.

The burning bush, (*Pyracanthus*;) for this suggestion, I am indebted to my friend Mr. James Nicholson, who has already set out a hedge of this beautiful plant, with the most favorable prospects of success. It is not only ornamental, but bushy and thorny, not exceeding the proper height for a hedge, and can scarcely fail of being valuable.

The cassina, (*Alex cassina*;) if not too familiar, would be highly prized for its beauty and durability, as an evergreen hedge. When once plashed, it would not require to be repaired or trimmed for many years, if ever. To please the eye and give it the uniformity of level and surface, expected near a residence, it may be occasionally dressed, but not of necessity.

The slow or black haw, (*Fibernum prunifolium*;) one of the prettiest of our many native shrubs, and one of the first to unfold its beauties in the spring, may be propagated from the seeds, or from suckers and layers, or by transplanting from the woods.

The hawthorn, (*Crataegus parvifolium*;) which is found in such abundance in all our old fields and commons, may be transplanted or raised from seed. It is slow in its growth, but not so slow as the black thorn of Europe. It is equally certain and effectual in forming a quick-set hedge.

The crab apple, (*Pyrus coronaria*;) is one of the most fragrant and ornamental of plants; its growth is slow, after having acquired the ordinary height of a fence, and it may be propagated with great ease from seed. It may likewise be transplanted, but is said to require much care and attention to preserve it.

On the subject of transplanting, suffer me to digress, for the purpose of reminding some and suggesting to others, that the success of this process may be greatly promoted, and rendered almost certain, by dividing the long horizontal roots of every plant or tree, that you wish to remove, at least a month or two before you contemplate such removal; and, if possible, while the plant is still vigorous in its summer foliage. The object of this early digging round the plant, is to give the opportunity and impose the necessity, for it to throw out numerous fibrous absorbing roots, to supply the nourishment, of which it had been deprived, by destroying the horizontal roots. While the tree

remains in its native position, this can be readily done in a month or two, but without this precautionary measure, it is exposed to death, before it can obtain sufficient nourishment by means of new roots. Again, I would recommend, that leaves, pine-trash, or moss, be thrown round the roots of plants newly set out, for the purpose of preserving an equal temperature, protecting them from the exhausting, scorching influence of the sun, preventing the growth of grass and weeds, and retaining moisture about the roots.

A difficulty may be supposed to exist, in making an entire inclosure, by the impossibility of propagating highland plants, where the fence should pass through a piece of low ground. Shall the hedge be interrupted in such situations, where of all others, the rail or common fence decays most rapidly? I think that it need not be interrupted by such a circumstance. I am confident that native plants may be found, well adapted to fencing in such situations. I suggest that the hazel or pond spice, (*Laurus geniculata*;) may be transplanted from ponds, and become a permanent fence. The willow is always at hand in such situations, and there can be no doubt of its success. The wild rose, (*Rosa corymbosa*;) and bramble, (*Rubus villosus*;) may be transplanted, separately, or together, on a bank run in the line of fence, and soon become impenetrable. The Tamarisk, which has a wonderful facility in adapting itself, to all descriptions of soils, may be tried, particularly where such grounds are occasionally overflowed by salt water, and where the line of fence may terminate at some creek, or other stream of salt water. The china briar, (*Smilax china*;) and green briar, (*Smilax pedunculata*;) the supple jack, (*Zyzyphus volubilis*;) the cross vine, (*Bignonia crucigera*;) and the other vines which grow luxuriantly in swampy places, may be transplanted with ease. The whortleberry, (*Vaccin. Stamiasm*, and *Fron-dosm*;) the *Aster caroliniana*, the *Kalmias*, *Andromeda*, *Rhododendrons*, and *Azalias*, may contribute to extend and adorn the inclosure. The farkle berry, (*Vaccin. m. arboreum*;) may be planted and transplanted in fencing through a piece of pine barren, where it might be difficult to succeed in propagating other shrubs.

It may be expected that I should offer an opinion as to the relative advantages of these plants for hedging. I acknowledge that I have not sufficient experience to decide any such question. If a garden is to be hedged, I might prefer the burning bush and daily rose. If a lane near my house, I probably would set out crab apples and pomegranates alternately, twenty or thirty feet apart, and fill the intermediate spaces with evergreens, such as the cassina, holly, orange, olive and Arbor vitae.* If an avenue be wanted on an inclosure for a farm, I might prefer the slow and haws, with intermediate tufts of Cherokee rose, Tamarisk, crab apple, or other ornamental plants.—But such selections will be directed by the greater taste and experience of different persons, or by the greater facilities enjoyed for obtaining either or all of the different kinds of plants. If a permanent fence be wanted for a pasture or other inclosure, what can be wished for more speedy, more certain, more durable, and less troublesome, than the common plum of the country? (*Prunus umbellata*;) the winter plum, (*Prunus hiemalis*;) and the pig plum, (*Prunus chica-sa*;) may be likewise used. A mixture of the three may be preferable to the use of either singly, as they blossom at different seasons of the year, and thus render the hedge more ornamental. They need not ever to be trimmed or dressed. Let them only be plashed, and the work is done. The fence will be impenetrable and almost everlasting.

* I have lately heard that Mr. J. Lucas and Mr. Thomas Bennett have perfected beautiful evergreen hedges of the Arbor vitae—and adopt the idea from their experiment: I have since also learned that Mr. Landreth, of Philadelphia, had such a hedge three years old in the year 1831.

The mode of plashing a hedge, being probably unknown to many of the society, I herewith present both a drawing and a model; hoping thereby not only to be better understood in my endeavor to describe it, but that a stronger impression of its facility and advantage, may thereby be made on the minds of the members. Plashing is done, by preserving in an upright position, every fourth plant, in the line of your hedge, and bending the intermediate plants to an angle of forty-five degrees, by means of a slight notch near the earth, so as to be wattled and interlocked with at least two of the upright plants. The tops are then attached by a thread, vine, or piece of bark, to the top of each upright plant; until the growth of branches interlocking each other, renders the intertie unnecessary. In the orange, rose, and thorn, it is probably unnecessary to secure the tops to each other. If in its proper place, the upright plant be too small or otherwise defective, a stake of cedar or other durable wood, may be used in addition to and in support of the young plants. The notch or incision, near the root of the bending plant, does not injure its growth, but generally causes a growth of suckers from the part, which thickens and improves the hedge. When the stems or trunks grow too stout, or when it becomes requisite to increase the mass or bulk of the hedge, it can be done, by cutting the trunk half through near the root; an abundant growth of suckers will ensue, and if necessary, the trunk may then be removed altogether. Plashing has unfortunately been spoken of by writers on this subject, as applicable only to old and decayed hedges, and even then with doubts of its advantages. I think that these doubts arise altogether from delaying to plash until the hedge is decaying, in which situation all expedients would be at least doubtful in restoring its strength. But if practised when the plant has acquired its proper height and strength, there can be no doubt of the benefits.

The want of fencing materials on some of the most valuable plantations in the state, has become a serious evil within the last thirty years. The very general destruction of the long leaf pitch pine, (*Pinus palustris*), about that time by insects, has left the planters, near the sea coast, under great difficulty in keeping their inclosures secure from year to year. The loblolly pine (*Pinus taeda*) decays so rapidly, that it is scarcely worth the trouble of splitting and carting.

If any of these suggestions should be deemed worthy of attention by gentlemen owning property in this or any other southern state, the result of their experience is respectfully requested for the benefit of all I should feel as much pleased in finding my speculations corrected by the judicious experiments of practical men, as in hearing that they had been tried and approved.

MISCELLANEOUS.

(From the Alabama State Intelligencer.)

CHOICE OF A PURSUIT.

An interesting article, on the choice of a profession, will be found on our first page, which we have copied from the Virginia Literary Museum. The observations there made were especially intended, it is true, for the meridian of Virginia; but "they will answer, with but slight variations," as they say in the almanacs, "for Alabama and the other southern states." Here, as in the Old Dominion, there is a pernicious and unphilosophical repugnance towards manual labor and the ordinary pursuits of life. Here, as there, well educated youth vainly fancy that they are "not upon the roll of common men." They therefore crowd the learned professions; and many of them are doomed, after they have gone through the forms of admittance to the practice of law or medicine, to wait for clients or for patients, until they know by experience that "hope delayed maketh the heart sick." We would be pleased to see a greater

portion of those who obtain a collegiate education turn their attention at once to agricultural pursuits. For these every man, we believe, has by nature a taste. If a different avocation be first selected, still the whims of fashion and the suggestions of pride will often give place to the voice of nature, which asks for the rural retreat—the tasteful home—the shaded yard—the well cultivated garden, uniting beauty with utility: the orchard, bending under Heaven's rich bounties—the blushing vineyard, and the whitened field. Is there any thing beneath the dignity of a man of genius in creating enjoyments like these? On the contrary, we should be much inclined to pronounce the man greatly deficient in genius who should have no taste for them. No pursuit can afford greater scope for originality of mind and inventive powers than that of husbandry. Does any one tell me that nothing new can be done in this department—that it is the old humdrum business of making cotton and corn, potatoes and cabbage? We ask him to look around him, and see if no improvements could be made in that system of husbandry which he witnesses. Has taste nothing further to ask for, by way of improvement in the erection of dwellings, in surrounding them with groves, in opening avenues and walks, in laying out gardens, and in the arts by which the home of the citizen may be assimilated to all that we can fancy of Paradise?

We may be told that these are the thoughts of a closet farmer, who prunes his trees, sets out his flowery shrubs, and guides the ornamental vine, merely in imagination; that farming is a matter of business; that it is laborious and irksome; and that, if we would put the matter to the test, the blooming visions of fancy would soon vanish before the painful realities of toil. There may be some truth in this objection: yet we have seen enough of the manifestations of taste and comfort surrounding the humble homes of men in moderate circumstances, to convince us that what we say is not all fiction, and that the want of taste or the love of gain, rather than the want of means, is the cause that the face of our cultivated country is not clothed with beauty and loveliness. Let it not be supposed that we would have any one to sacrifice utility for the sake of display: on the contrary, it is with the highest degree of utility that beauty and taste are most generally united. But that agricultural employment which will bring most money to the farmer is not always the most useful. It is a strange mistake, and yet it is very frequently made, to confound the acquisition of money with utility. The happiness of life is made up of enjoyments and comforts, too minute and too numerous to be specified, very few of which can be purchased with money. When poets have sung of the "sweets of home," they have touched a kindred cord in every heart, which assures us that they have not dealt in fiction: and yet who does not know that the delights of this domestic paradise do not consist in the accumulation of wealth, or in the active course of what is called a profitable business. Competence is indeed an indispensable ingredient in the forming of a happy home; but beyond that, it is he who boasts himself a practical man, and a man of business, who knows and appreciates the value of money, who is in truth the visionary, who forms notions of happiness and consequence that only exist in his imagination.

It seems to us that the business of agriculture ought to be held in higher estimation than it generally is by young men who have received a liberal education, and who are about to choose some profession or avocation for the employment of their future life. It must be admitted, that if the farmer or planter were under the necessity of pursuing in all things the beaten track of his predecessors, namely, (as it has been justly described,) that of "raising cotton to get money, to buy negroes to raise more cotton, to get more money to buy more negroes," then indeed the pursuit would have very little in it that could be called inviting; but it is for men of genius and cultivated

minds to diversify, modify and improve the art of husbandry, in such a manner that with it no other avocation will bear a comparison.

It has been justly remarked, that the profession of the law is often chosen, not for its own sake, but as a stepping stone to political life. If this should be the object, it is questionable whether the employment of an agriculturist would not offer to the political aspirant a prospect as fair as he would find at the bar. Should he not possess talents, he will find no advantage by being called a lawyer, and should he possess them, they will make themselves known, even from his country residence. Agriculture is the common pursuit of the mass of the community; and therefore he who follows it, other things being equal, will have the greatest share of popular sympathy and attachment.

(From Goodsell's Genesee Farmer.)

PREVENTIVE FOR POISON BY IVY.

Brighton, 8th, mo. 17, 1833.

In ounce of preventive better than a pound of cure.—I noticed an article in Goodsell's Genesee Farmer on the subject of poison by ivy, and as it is one which interest farmers at this season of the year, being about commencing their mowing, I am induced to state for the benefit of others what I have learned on that subject. In the year 1817, I was engaged in clearing up a piece of low land where much of the ivy grew, and having a number of times before experienced the sad effects, by nearly losing the use of both hands and feet I approached my labor very cautiously, watching every step, lest I should touch my enemy. I had at the same time a man to work with me, who, seeing my fearful situation, told me to "chew the leaves and swallow the juice, and I need not be afraid of being poisoned." I hesitated supposing the remedy would be worse than the disease, but from his repeated assurance that it would not hurt one, and having his example in the case, I ventured. The consequence was, I labored amongst it for several days without experiencing the least inconvenience. From that time to the present it has been my practice, when exposed to the effects of the vine, to chew the leaves, and have never been poisoned when I have done so.

M. ATWATER.

Note Ed—The vine above alluded to, is the *Rhus toxicodendron*, of L. and the variety *radicans*, a creeping vine from which many small roots protrude. It is frequently found in meadows upon stumps, into which the roots penetrate.

(From Babbage's Economy of Machinery and Manufactures.)

CLOVER AND TREFOL SEEDS.

Some years since, a mode of preparing old clover and trefol seeds by a process called *doctoring*, became so prevalent as to excite the attention of the House of Commons. It appeared in evidence before a committee, that the old seed of the white clover was *doctored* by first wetting it slightly, and then drying it with the fumes of burning sulphur; and that the red clover seed had its color improved by shaking it in a sack with a small quantity of indigo; but this being detected after a time, the *doctors* then used a preparation of logwood, fixed by a little copperas, and sometimes by verdigris; thus at once improving the appearance of the old seed, and diminishing, if not destroying, its vegetative power already enfeebled by age. Supposing no injury had resulted to good seed so prepared, it was proved that from the improved appearance, its market price would be enhanced by this process from five to twenty-five shillings a hundred weight. But the greatest evil arose from the circumstance of these processes rendering old and worthless seed, in appearance, equal to the best. One witness tried some *doctored* seed, and found that not above one grain in a hundred grew, and that those which did vegetate died away afterwards; whilst about

eighty or ninety per cent. of good seed usually grows. The seed so treated was sold to retail dealers in the country, who, of course, endeavored to purchase at the cheapest rate, and from them it got into the hands of the farmers; neither of these classes being at all capable of distinguishing the fraudulent from the genuine seed. Many cultivators, in consequence, diminished their consumption of the article; and others were obliged to pay a higher price to those who had skill to distinguish the mixed seed, and who had integrity and character to prevent them from dealing in it.

Prices Current in New York, August 3.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, 15 a 17½; Upland, 14 a 17; Alabama, 15 a 17. *Cotton Bagging*, Hemp, yd. 13 a 21; Flax, 11 a 15. *Flax*, American, 8½ a 9. *Flaxseed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a 5.56; Canal, 5.68½ a 5.87½; Balt. How'd st. 6.25 a 6.31½; Rh'd city mills, — a —; country, 6.00 a 6.12; Alexandria, 5.87½ a 6.09; Fredericksburg, 5.87½ a —; Petersburg, 5.87½ a —; Rye flour, 3.62½ a 3.75; Indian meal, per bbl. 3.75 a 3.97½, per hhd. 16.50 a 17.00. *Grain*, Wheat, North, 1.16 a —; Vir. — a —; Rye, North, .75 a .76; Corn, Yel. North, .74 a .75. *Barley*, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; *Provisions*, Beef, mess, 10.25 a 10.75; prime, 6.50 a 6.75; cargo, — a —; Pork, mess, bbl. 15.25 a 15.75, prime, 11.50 a 11.75; Lard, 9 a 10½.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood Bull, twenty months old, sired by Bolivar, out of a first rate imported cow. Price \$200.

One full blood bull, two years old—a very fine animal. Price \$250.

One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

Address

I. I. HITCHCOCK,
Amer. Far. Establishment.

A BULL,

One year old, sired by Bolivar, out of a very deep milker of fifteen-sixteenths Durham blood, (consequently he lacks but one-thirty-second part of being full blooded,) will be sold for \$150. Inquire of

I. I. HITCHCOCK,
American Farmer Establishment.

EARLY YORK CABBAGE.

And all other GARDEN SEEDS, suitable for fall sowing, are for sale at the American Farmer Seed Store, by

I. I. HITCHCOCK.

WANTED, A BAKEWELL RAM,

One year old or more, for which a fair price will be paid. Inquire of

I. I. HITCHCOCK,
American Farmer Establishment.

A DEVON BULL,

Six years old, a first rate animal in every respect, for sale low. He is believed to be decidedly the best animal of the kind in Maryland. Price \$200.

Address

I. I. HITCHCOCK,
American Farmer Establishment.

DEVON CATTLE.

For sale by the Subscriber, one Devon Bull, ten months old; a handsome and promising calf. Price \$100.

Also, a very beautiful and valuable Devon Heifer, two years old. Price \$175.

I. I. HITCHCOCK,

American Farmer Establishment.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep.

The stock now on hand for sale, is the following: Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address

I. I. HITCHCOCK,

American Farmer Establishment.

TALL MEADOW OAT GRASS SEED.

Just received at the American Farmer Establishment, 100 bushels Tall Meadow Oat Grass Seed, of first quality, just harvested and for sale, at \$2.50 per bushel, by

I. I. HITCHCOCK.

TO FARMERS.

J. S. EASTMAN would inform the public, that he has in store a good supply of Grain and Grass Seythes, Grain Cradles, Seythe Snaths by the dozen or single, Shovels, Spades, Manure and Hay Forks.

Field and Garden Hoes, and a general assortment of Garden Tools manufactured expressly for him.

Patent Cylindrical Straw Cutters of various sizes and prices, also common Cutting Boxes, Wheat Fans, Corn Shellers, Harrows and Cultivators, and a general assortment of Ploughs, and all kinds of Castings for Davis' Improved Patent Ploughs, with a great variety of other Agricultural Implements.

And also Fox and Borland's Patent Spring Concave Threshing Machines ready made on hand.

Likewise a general assortment of Garden Seeds, such as he believes to be genuine.

He is also Agent for an Iron Foundry, in the vicinity of Baltimore, and can furnish at short notice, any kind of Iron Castings of superior quality, on as reasonable terms as can be had in this city. The quality of Casting can be seen at any time, at his store in Pratt street, near Hanover street. Ap. 26.



TURNIP SEED, BUCKWHEAT, &c.

400 lbs. White Flat and Red Top Turnip Seed.

100 lbs. Ruta Baga or Swedish do do

The above is of the present years' growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Locust Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given.

July 13.

SINCLAIR & MOORE.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is scarcely a shade of variation in the prices of flour or grain. The small quantity of Howard street flour coming in, sells from wagons at \$6.00 for fresh ground. The demand from stores is confined almost entirely to the retail for home consumption. Our quotations of wheat embrace the prices given for the various qualities from good to prime.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.60 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 4.00. The inspections of the week comprise 383 hhd. Md.; 70 hhd. Ohio; and 2 hhd. Vir.—total 455 hhd.

FLOUR—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.12½ a 6.25; city mills, 6.12½ a 6.25—city mills extra 6.50 a —;—CORN MEAL bbl 3 62½;—GRAIN, new red wheat, 1.15 a 1.20; white do 1.20 a 1.25—CORN, white, 62 a 64; yellow, 64 a 66;—RYE, 65 a 67—OATS, 29 a 31.—BEANS, 75 a 80—PEAS, 65 a 70—CLOVER-SEED 8.00 a ——TIMOTHY, 3.00 a ——ORCHARD GRASS 3.00 a ——Tall Meadow Oat Grass 2.25 a 2.50—Herds, 1.00 a ——Lucerne — a 37½ lb.—BARLEY,—FLAXSEED 1.37 a 1.50—COTTON, Va.—a ——Lou. 18 a ——Alab. — a ——Tenn. — a ——N. Car. — a ——Upland — a 17—WHEATRY, hhd. 1st p. 29 a — in bbls. 30 a 31½—Wool, Washed, Prime or Saxony Fleece 45 a 50; American Full Blood, 38 a 42; three quarters do. 33 a 38; half do. 30 a 33; quarter do. 28 a 30; common 25 a 28. Unwashed, Prime or Saxony Fleece, 25 a 30; American Full Blood, 22 a 25; three quarters do. 20 a 22; half do. 18 a 20; quarter do 16 a 18; common, 16 a 18 Hemp, Russia, ton, \$180 a 190; Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 38;—Plaster Paris, per ton, 4.12½ a 4.25; ground, 1.50 a —bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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GENERAL

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COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

— An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Directions next week.)

— DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. I. Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

GAMA GRASS.

BALTIMORE, FRIDAY, AUGUST 16, 1833.

GAMA GRASS.—The following letter from Mr. Herbemont, on the subject of Gama Grass, will be read with interest. It seems to us impossible that so many gentlemen, such as Mr. Herbemont, of South Carolina, Mr. Mears, of North Carolina, Mr. McGoffin, of Georgia, and several others, all of whom have tried it, should be mistaken in the value of it as a forage grass. And if they are not mistaken, then it is one of the most important acquisitions ever made in southern agriculture—and we have good reason to hope that the middle states at least will be able to avail of it also, as we have a plant of it that withstood the frosts of last winter, and from a publication in the National Intelligencer, we are led to believe it is growing spontaneously near Washington. (We have taken measures to obtain some of the plants, supposed to be the Gama Grass, and shall be able to speak with certainty as to this fact shortly.)

It is very probable that this valuable grass may be found in various places throughout the middle and southern states, and we recommend a careful perusal of the letter of Wm. B. Mears, esq. published in our last number, for the purpose of obtaining a knowledge of the characters of the grass, that it may the more readily be identified. Mr. Mears, and Mr. Herbemont, agree as to the identity of what heretofore were considered two distinct species. *Tripsacum dactyloides*, and *T. monostachyon*, the latter being the gama grass in question. These gentlemen consider them the same plant, the number of spikes, one or more, being an accidental circumstance. We therefore agree with Mr. Herbemont, that the old specific names, *monostachyon* and *dactyloides*, should be abandoned, and that of *Tripsacum gama*, adopted as the botanical name. The seeds of the gama grass are very hard, having a thick shell that almost resists the knife, and therefore we think it should be well soaked in warm water before it is planted.

Since the above was written, we have had the pleasure of a visit from Mr. Mears, whose article on this grass, appeared in our last. He confirms verbally all the favorable accounts heretofore published on the subject, and says that he considers the discovery of the valuable qualities of it the most important event to the south that has ever occurred in agriculture. It will enable the southern farmer to produce hay and green forage to any extent, and thus render him independent of the north and west for beef, butter, cheese, &c. and in fact make the south a stock raising country.

☞ We hope the people of the south will take measures to secure all the seed that can be obtained. They may depend upon receiving a good price for it.

GAMA GRASS.

A PROBABLE BOTANICAL ERROR RESPECTING IT, CORRECTED.

MR. SMITH: Columbia, S. C. August 2, 1833.

Dear Sir,—In the number of your American Farmer, of the 26th ult. page 157, I noticed an article taken from the Newbern Spectator, signed H. B. C. on the subject of the gama grass, *Tripsacum monostachyon*. This gentleman says:—"And to this conclusion," (that all the different species of this genus were cultivated for provender.) "I have been led by my subsequent inquiries of those who have cultivated the grass. For one gentleman assures me, that the grass which he cultivates as the gama grass has the spikes aggregated, and is therefore, the *Tripsacum dactyloides*; another, that the spikes of his grass are cylindrical and solitary, and is therefore the *T. monostachyon*, if indeed, it be not the *T. cylindricum* of Michaux." This led me to suspect that there might be some error in the original description and denomi-

nation of the plant, and to ascertain this as much as I am able, I examined my gama grass in a state of cultivation, more particularly than I ever had done, and compared it with the description of various botanists. This satisfied me of the probability, (at least) that the *T. dactyloides* and the *T. monostachyon* are the same grass, and that Michaux and the other botanists who have noticed it, have probably been led into an error by the circumstance which will be noticed here below. My grass, the seed of which was given to me in the spring of 1832, answers the description of both species, viz: some of it has double, others triple spikes, while others, perhaps the greater number have single ones. I speak only of the first terminal spikes. This might indicate that I have both species; but the stem, whether terminating in a single, double or triple spike invariably produces none but single cylindrical ones on the branches. Now if you examine the plant with several spikes, before the branches have put out, (and the principal or terminal spike generally arrives to perfection before the branches make their appearance,) it will be found to agree perfectly with the *T. dactyloides*; but if the plant be examined later, the spike at the termination of the branches which are all single and cylindrical, and they agree perfectly with the description of the *T. monostachyon*. Some of the plants, particularly some of the less vigorous ones, have the terminal spike single and cylindrical. It appears to me extremely probable, that Michaux and others, have only examined this plant rather too early, and by seeing in one locality, plants bearing several spikes at the summit, and in another, perhaps less fertile spot, single cylindrical ones, have very naturally taken them for distinct species. I may here observe, that before the branches with their single spikes make their appearance, the principal and terminal one has already lost all its sexual characters, so that in this state the plant cannot be subject to correct botanical examination. I have not seen the other species, *T. cylindricum*, and *T. hermaphroditum*. Pursh seems to have suspected the error; for he says, "the *T. monostachyon* seems to be but a single spiked variety of the former," (the *T. dactyloides*.) It is needless here to notice the botanical characters of the plant, which are certainly the same in all I have seen; but I may observe, that when it terminates with two spikes, the two when brought close together form a cylinder, and so do the three spikes; the last being triangular, and the former semi-cylindrical.

As this plant is not a native of my immediate neighborhood, I have not seen it in its native state. I divided the small parcel of seed given to me into two equal parts, one of which was planted in my garden, and the other at my farm; both very dry sandy spots. That, at my farm was planted in a row about four hundred feet long, a part of which is much poorer than the other, and the poorest part produced a greater proportion of single spikes than the other, or than that in my garden. The number, with two spikes is comparatively very small, next the three spiked, then the single or cylindrical ones which are rather the most numerous. It must not be forgotten, that I speak here only of the first and terminal spikes at the summit; for all the lateral ones are invariably single and cylindrical, and perfectly similar to the others in every other respect.

It is always desirable to have errors in science corrected, and it is particularly so when they relate to an object likely to be so extensively useful as the gama grass promises to be. I have thus noticed this presumed error to induce able and better known botanists to look into this matter, and make the due correction. It seems to me, that if I am correct in my view of the subject, both specific names, *dactyloides* and *monostachyon*, will have to be given up, and some other given to designate the plant. I am not prepared to propose positively a name; but I will suggest, that if "gama" is, as it seems to be the name of a Spanish gentleman who first introduced this grass into cultivation, in Mexico or elsewhere, why not com-

memorate the benefit by giving it his name as the specific one, particularly as it is that by which it is now more generally known? *Tripsacum gama* or *gamae*, would then do very well, and it seems to me very desirable always to approximate, as much as is practicable, the common to the botanical names.

It is supposed that this grass is rather too coarse and rough. It would probably be so if it were kept till it is too old before it is cut for fodder. As I intend to save all the seed of it I can, I reserved only a small portion of my grass for cutting, and it was cut for the fourth time this season, on the 27th ult. It might have been cut at least once more, if I had begun earlier, as I should have done; and I expect to cut it at least two or three times more. I wish it were practicable to send you, sir, a specimen of the hay, as also specimens of the stalk with its various spikes for botanical examination. I shall do so if I can. The hay, I have no doubt, would be found excellent. As to the amount of produce, it is most probable that the account I have seen, stating that it would be about 300,000 lbs. of green grass per acre, the person that made it was rather too sanguine; but there can be no doubt of its being the most productive and easily cultivated grass ever tried in this country. I am, very respectfully, dear sir, your obedient servant. N. HERBEMONT.

EARLY CORN.

MR. SMITH: Siloa, Greene Co. Tenn. July 31, 1833.

Sir,—I observe further notices of the early white corn, in a late number of the Farmer. It has with me verified, if not gone beyond the flattering accounts heretofore given of it in your paper. The few grains you sent me, I planted in a spare piece of ground, consisting of twelve hills, distant about two and a half feet apart each way in my garden. I did not get the grains until towards the last of April, and planted them on the same day. I was attentive to the progress of its growth, and was satisfied it was in the roasting-ear state about the middle of June, perhaps a little before, but seeing its rapid progress, and being desirous to save every ear, I did not pull or suffer any to be pulled in its soft state. It is now hard and dry, the stalks as well as corn, dried entirely. I removed it into a safe place still on the stalk—but, am convinced it would now vegetate if planted—but, although there is fully as much of the summer remaining in this climate as has passed, I shall not try a second crop, but reserve it all for the greater certainty of a spring crop.

I felt some hesitation about the numerous suckers which put out from the stock, I broke them off generally as fast as they appeared; two I left to two of the strongest plants, which produced each a small ear. The other parcel of grains, which were much shriveled as if unripe when gathered, I also planted in about as much ground in my garden as the first. It all came up, and has grown quite tall, (the white not more than three and a half feet to the top of the tassel,) and although the tall corn was marked earliest garden corn, (by mistake—it was the early Tuscarora,) it has but just passed the roasting-ear state, and was very full and fine, the grain large and white, of that we have eaten about half. I think it a fine corn in this climate, and might be advantageously adopted as a field corn here, it is from two to three weeks earlier than our common flint kind. I am, most respectfully,

JOHN LOVE.

A STEEL TRAP.—A gentleman who had long been subject to the nocturnal visitation of thieves in his orchards, wishing to preserve his property without endangering any one's life, procured from a hospital the leg of a subject, which he placed one evening in a steel trap in his garden, and next morning sent the crier round the town to announce that "the owner of the leg left in the trap in Mr. R's grounds last night, might receive it upon application." He was never robbed again.—English paper.

AGRICULTURE.

(From the Southern Agriculturist.)

A CUNT OF AN AGRICULTURAL EXCURSION.

Made into the South of Georgia in the winter of 1852.

By THE EDITOR.

(Continued from page 115.)

We remained several days at "Hopetoun," enjoying the hospitality of J. Hamilton Couper, Esq. during which time we were busily employed in viewing the plantation, and taking notes of such things as we saw or heard of. To Mr. Couper, we feel peculiarly indebted for the many facilities he afforded us for viewing his establishment and its various operations. He not only politely attended us in our excursion over the various fields, pointing out such things as were most worthy of notice, and giving such information as was necessary; but he also submitted to our inspection the various books kept on the place, and thus exhibited to us the minutest details of the operations of the plantation. But even with all these facilities, we should not have been able to have given as ample and as satisfactory an account of "Hopetoun," as we wished, and as it justly merits, had he not kindly assisted us still further by furnishing us with notes in reply to several queries propounded to him. To these we shall frequently refer in our account of this place, and quote largely from them, as being more full and more satisfactory than anything we can pen; we shall only add such other matters as are not embraced in them, or which our notes enables us to give something in addition.

We need scarcely say, that our time passed most pleasantly, and much did we regret that our time would not permit us to remain longer, for although we gathered much information during the time we remained, yet we are conscious that twice that period might have been spent both pleasantly and profitably. It requires many days to examine and understand the management of any large establishment, especially such a one as "Hopetoun," where not only all of the valuable crops of the south are cultivated in rotation, but where they are also prepared for market on the place, and where every arrangement exhibits both science and skill, and the management of one well versed not only in the science but practice of agriculture. We hesitate not to say "Hopetoun," is decidedly the best regulated plantation we ever visited, and we doubt whether it can be equalled (certainly not surpassed) in the southern states, and perhaps, when we consider the extent of the operations, the variety of crops cultivated, and the number of operatives who have to be directed and managed, so that their work may be made productive, it will not be presumptuous to say, that it may fairly challenge comparison with any establishment in the United States; whether we consider the systematic arrangement of the whole, the regularity and precision with which each and all of the operations are conducted, or the perfect and daily accountability established in every department. We hope we may be able to give such an account of this place as will convey a correct idea of its management, and we trust that our readers will not tire, should we enter more into detail than is usual with us; we may be tedious and uninteresting, but it will not be from want of interesting matter, but our inability to give it a pleasing form. We feel more desirous of entering into minute details of this place because it highly deserves to be held up as a pattern for our southern planters. In a few years other plantations may equal, perhaps surpass what "Hopetoun" now is, but Mr. Couper is yet a young man, well versed in all the sciences requisite for a southern planter, and now in the full tide of successful operations. If he has already accomplished so much, what may we not yet expect, when further experience shall have added to his already extensive stock of information, pointing out his errors and opening new vistas

to his sight. We may remark here, *en passant*, that every statement we shall give may be implicitly relied on, for, with Mr. Couper, there is no guess work, every transaction is regularly entered in some one of the books kept on the plantation, and on being questioned as to any fact or experiment, he can at once turn to the record of it, if he has ever had any experience on the subject. His fields are also laid out with the utmost accuracy, so that the exact quantity in each is distinctly known, and consequently, the exact product ascertained, if any thing like care is taken in the measurement when gathered; and as daily returns are made of every operation, there is not the possibility of any error occurring which would not be almost immediately detected.

"Hopetoun" is situated on the south side of the southern branch of the Altamaha river, about five miles by the course of the river from Darien, and fourteen miles from the sea. The swamp land is connected with the high land of the main, which is pine barren, and valuable only for an abundant supply of excellent timber for building, and fuel for the furnaces of the steam engine and sugar kettles.—The several tracts of land composing the plantation contains 1416 acres of swamp and 2388 acres of pine land. Of the swamp 135 acres river knoll, 50 bay land, and the remaining 1261 acres are tide swamp, which 936 acres of swamp, and 30 of pine land has been cleared and are under cultivation. Of the 936 acres of cleared swamp, 736 acres are enclosed by one outside bank. This bank is 3.5 miles in length, has a base of 20 feet, a top of 5 feet, and a height of 52 feet. It is coated throughout its whole length with Bermuda grass, (*Cynodon dactylon*), known among us as *joint grass*. Of these 736 acres enclosed within this bank 6792 acres are arable, 341 acres are occupied in ditches, and 26 acres in bank. Of the arable lands 6374 acres are in fields, 184 in margins, and 222 acres in roads. The remainder of the cultivated land having been recently cleared is under smaller banks.

* To these books we shall again refer.

† This grass is strongly recommended by Mr. Couper for the coating of all rice field banks, as it is a sure protection against any breakage by freshets—instances having occurred where the water has poured over banks thus protected, for days without doing the least damage, whilst those spots not thus protected were swept entirely away. A striking instance of the efficacy of this grass in protecting the banks was mentioned to us. The whole of one of the division banks was thus coated, except where a footpath crossed.—During a freshet the water swept over this bank for some time with considerable violence. When it had subsided, the bank was found entire and without the least injury except where this footpath had crossed, and here it had the appearance of a small ditch having been cut by a spade that part alone which was unprotected by the grass being washed away. From all that we saw and heard, both from Mr. Couper and others, we cannot too strongly recommend it to our planters, for coating their river banks at least, especially where they are subject to damage from freshets. Care must, however, be taken to permit it to get a foothold on the high land, for of all grasses, it is the most difficult to eradicate, with the exception of the nut grass, which, we believe, is not to be conquered even by the Frenchman's patent. (a) But whilst confined to the river banks, it is completely kept in check by the water, by which it is easily killed. We saw banks, on which it had been for fourteen years without its having spread beyond the base, and this one, of the cross banks running through the very midst of the fields. On Butler's Island, it has been for upwards of twenty years, and is still confined to the banks; in fact, so completely is it under control, that not the least fear is entertained of its ever encroaching on the cultivated land, and as a protection to the banks, it is thought invaluable.

(a) A Frenchman took out a patent a few years ago to destroy this grass by scalding it to death. We refer the curious to the specification of his patent, in the Journal of the Franklin Institute, should they be disposed to enter the list with it.

As this place is on account of its situation exposed to injury from freshets, which sometimes are very destructive on this river. Mr. Couper has with great judgment divided his fields into five divisions, each of which is protected by banks of sufficient strength to resist ordinary inundations. The advantage of this arrangement is at once obvious. Should the banks of any single division give way, that division alone would suffer, the banks of the other four being amply strong enough to protect them; but should any of them prove unequal to the force of water pressing on them, yet only those divisions would suffer. Thus, then, instead of relying on one large external bank for the safety of the crops, he has five on which dependence can be placed, besides the usual check banks, and it rarely will occur that more than one of these divisions will suffer, unless the risk be indeed overpowering. At any rate, the risk is diminished, and the probability is, that only one division or one-fifth would suffer.

It was a beautiful clear and mild day in December, when we first arrived at "Hopetoun." The river landing is near to the termination of a large canal, along the banks of which a footpath runs, leading up to the settlement. On emerging from a few shrubs on the margin of the river, the whole of the Hopetoun establishment burst on the view, and was truly a beautiful sight. The large white mansion, situated on an eminence rising somewhat abruptly from the fields, and partly concealed by shrubbery; the steam mill and sugar establishment with the lofty chimney, from the top of which arose and gently curled the light blue smoke; the various offices neatly white-washed, and which showed to advantage as half seen, half hid by shrubbery, they appeared and disappeared, as you advanced along the bank, formed a sight truly pleasing. The distance from the landing to the sugar house is a mile and a quarter, and a large and deep canal, with lock gates at the river runs in a direct line from thence to the sugar mill, from whence it proceeds to within a short distance of the house, passes along the margin of the high grounds, again through the fields, and finally empties into the river a short distance from where it commenced. This canal is three miles in length, fifteen feet wide at the surface, ten at the bottom, and four and a half deep, and is very important in draining the fields, admitting water for cleansing the plantation, carrying up the cane crop to the mill, the produce to the river, and bringing up supplies. We shall have occasion again to notice this canal, and the various uses to which it is applied. Proceeding along this bank, in due course of time, we arrived at the sugar establishment, where we had the pleasure of meeting Mr. Couper, and witnessing the mill and boilers in full operation. We were not detained here, long, at this time, but conducted to the mansion and introduced to his charming family. In the afternoon we again visited the sugar house, and examined the various operations from the landing of the cane from the flats on the canal, at the foot of the inclined plain to the draining of the sugar in the curing house. We several times visited the establishment, and shall in the proper place give a more ample account of what we saw and noted. Whilst here, we visited the nursery and hospital, the negro quarters, the cotton house, and the other offices, together with a number of the fields. All the crops had been harvested except the cane, and we had the pleasure of seeing all the operations connected with this valuable crop, from the commencement of the stripping the cane to the final preparation for market. But we will proceed more systematically to work, and give an account of all we saw in their proper places. We will commence with the arrangement of the fields, and the crops cultivated, and we will here quote largely from Mr. Couper's notes.

*The average size of the fields is about fifty acres. They were originally laid off for cotton culture; and the divisions were made principally with reference to

facility of drainage and the quality of the soil. As the size of the gang of negroes admits of these fields being worked in one day, they have not been reduced since adopting the rice culture. The usual form is rectangular, with an average width of 1100 feet from bank to bank, and a length of from 2500 feet to 3300 feet. The fields are surrounded by leading ditches, the average dimensions of which are 4 feet deep, 8 feet at the surface, and 4 feet at the bottom. At right angles to the leading ditches are smaller ones, about 2 feet wide and 2 feet deep, 52½ feet apart.—In most of the fields these small ditches are intersected by roads 24 feet wide, with side ditches 3 feet wide and 3 feet deep. These roads are generally about 175 feet apart from centre to centre. Each field is therefore divided into four sections, having an average width of 250 feet, and a length equal to that of the whole field. When the fields are in a dry culture crop, a deep water furrow is opened by the plough, parallel to the roads at intervals of 52½ feet. The land is thus checked off into small squares of 52½ feet, or 16 1/4 acres.

The original object of making the roads was to facilitate the harvesting of the cane crop. Independently of this they are very useful in draining and for the carrying of manure. As they are planted and produced good crops of every kind, the space occupied by them is not lost.

Total of the fields, trunks are placed at the points most advantageous for drainage; and one square foot orifice, or water way, is allowed for 3 acres of land.

Those fields which are more than half a mile from the river, drain into a canal, passing through the centre of the plantation. This canal is three miles in length, 15 feet wide at the surface, 10 feet at the bottom, and 4½ feet deep; the extremities of it terminate at the river. At one of them is a lock gate 75 feet long, 12 feet wide, with four pair of gates, calculated to pass flats 45 feet long, and 11 feet wide at any stage of the tide; except the last 1 of the ebb and first 1 of the flood; at the other is a flood gate 35 feet long, 11 feet wide, with two pair of gates.—This arrangement, by allowing the water to enter at one end of the canal and to be discharged at the other, prevents it from stagnating. This canal cost about 10,000 days' labor. It serves the purposes of draining and flowing the interior fields—and of harvesting the crops and transporting produce and plantation supplies to and from the river, which is 14 miles distant from the settlement. It is particularly useful in harvesting the cane crop, as it admits of the use of flats carrying from 12 to 15 tons; two of which are connected together and drawn by a yoke of oxen, attached to a tow rope.

Crops cultivated.—On the pine land, sweet and Irish potatoes, cow peas, turnips and rye. This soil is regularly manured from the cattle pens, and is devoted to secondary crops.

On the swamp lands. Rice, cane, cotton, and occasionally corn. The three first named crops are made to alternate with each other as far as the disturbing causes of new clearings, unexpected extension of a new culture, contraction of an old one, and the peculiarities of soil and situation have permitted. In order to apply to practice the important principles of a rotation of crops, the general system is to alternate a rice crop with one of cotton or cane. The leading objects are to make a plant requiring a dry culture succeed one benefited by water; and to interpose the cotton having a system of broad leaves and a long tap root, between the cane and rice, which are, both fibrous rooted and narrow leaved. The best rotation of these three crops has been found to be, first year, rice, second, cotton, third, cane. If the land is fresh and strong, then, first year, rice, second, cotton, third, cane, fourth, cane. If worn, the cane should be limited to one year.

If the land is kept longer than one year in rice, particularly if flowed during the winter, the subsequent dry crop, has with me, been of inferior quality.

The wet culture, if too long continued, leaves a sourness in the land which is unfavorable to cotton, but more so to cane. To avoid this effect, the land should be but one year in rice, and kept dry and deeply turned up during the winter months.

Cotton is placed after rice in preference to cane, because its habits are more dissimilar, and because, being cultivated on higher ridges, the land is sooner deprived of the sourness and coldness left by the water culture. Moreover from the frequent hoings given to the cotton plant, together with the action of its tap root, the soil is best pulverized and adapted to receive the cane. A further reason is, that the cane being the more valuable crop, it is placed under the most favorable circumstances.

On the knoll lands, cotton and cane only are made to alternate. This rotation is a trying one; and, to prevent the exhaustion of the soil, manure must be resorted to. The leaves of the cane listed in during the winter, form a valuable and large source of manure. The supply most relied on, however, is derived from the expressed canes, placed from 12 to 3 feet deep in the cattle pens; and from rice straw, either listed in under the cotton beds, or placed in sheep, hog, and cattle pens and then used.

The result of a system of rotation of rice, cotton and cane is highly favorable to the increased production of each crop. It is particularly so to the rice crop, which rarely falls short of 70 bushels to the acre, after either cotton or cane. The cane crop is generally fine after cotton; and cotton after cane, if the cane trash is listed in. The advantage is not so manifest in a cotton crop following one of rice, particularly, as above noticed, if the land has been in rice several years immediately preceding. By the adoption of the alternate wet and dry culture, the extirpation of the weeds and grasses peculiar to each is greatly facilitated; and hence, a great saving of labor is effected. A further and important advantage results from the alternate culture, in the order of succession in which the labor is applied to the different crops, particularly the rice and cane. The planting of the three crops follows most conveniently, as the cane should be placed in the ground before the 1st of March; the rice between the 1st and the end of March; and the cotton from the 25th of March to the 10th of April. The harvesting of rice and cane, does not at all interfere, as that of the former is completed some time before that of the latter is commenced. The cotton picking interferes somewhat with the harvesting of both rice and cane; but when the proportion of the cotton crop does not exceed one-fourth to one-sixth of the others, by a judicious arrangement of work, and the employment of the weaker hands in picking, no very serious inconvenience is felt. The time which intervenes between the laying by of the crops and the harvest, affords leisure for cutting wood, cleaning canals, ditches, &c. The manufacture of the three crops follows in convenient succession. From the 1st of November to the 15th of December, is devoted to the manufacture of the cane crop. From the latter period, the weak hands are occupied in assorting and moting cotton, while the stronger hands are engaged in ditching, ploughing, listing and planting cane. As the cotton crop is ginned by Eave's gins, propelled by animal power; and the rice threshed out by a threshing machine, driven by a steam engine, a very small proportion of the gang of negroes is diverted from the field operations, for the preparation of these crops for market.

It is unnecessary to remark on the advantage resulting from the alternate culture in maintaining the fertility of the soil, and in drawing from it the greatest amount of vegetable production.

We yet want 100 acres of the full complement of land for the gang; when the clearings which have been commenced are finished, we shall have in cultivation 1000 acres of land; and as a part of it will for some years be unfit for cotton and cane, for some time to come the rotation in those fields will be de-

ranged. The proportion of the various crops will be about 500 acres in rice, 170 in cotton, and 330 in cane."

(To be continued.)

(From the Maine Farmer.)

RUST IN WHEAT.

We have seen some winter wheat, which last week promised a most bountiful harvest, ruined by the rust; and an examination of the crop corroborates the opinion which we have before intimated, as brought forward by Dr. Dwight, that it is owing to too much sap, produced by an excess of food of animal nature, or from animal manure. We are aware that there are various theories to account for the rust, as it is called, upon grain. Some consider it occasioned by a fungus plant, very small and very numerous, a kind of moss which attaches itself to the leaves and stalks of the grain, and sucks and sucks the sap till there is no more for it. Hence, some say that a barberry bush in the vicinity of a rye or wheat field, will bring on the rust, because this moss or fungus is always found on the barberry, and spreads from this to the grain. This theory is supported by the high authority of Sir Humphry Davy, Sir Joseph Banks, and a host of other Sirs, from whom, bowing with all due deference, we beg leave to dissent. Because, we have, in days of yore, reaped rye where were "lots" of barberry bushes, well clad with fungi or mosses, and yet the rye was free from the rust.

Others have a theory that it is occasioned by an abundance of dew settling upon the leaves and stalks, and when the sun comes up, hot and scorching, either scalds or by some other process, brings, on the trouble of rust, &c. In Italy and in some other parts of the world, where this theory prevails, they sweep their grain, by taking a rope, and a hand at each end and thus pass it over the grain. Now we cannot think that this theory is correct; for the dew cannot become so hot as to injure any thing, as it is soon dissolved by the air, and taken off.

The sweeping may be beneficial in this way; it puts the plants or stalks of grain into action, and by agitation gives a start to the circulation, and thus relieves the already gorged vessels or tubes of the plant, and thereby prevents them from bursting and destroying the plant. It is a fact well known to those who have observed it, that a tree grows stouter, stronger and larger in a good soil where it can be agitated by the wind, than it would on an equally good soil where it could not be thus shaken; and may not the wheat thus be enabled to use up a greater quantity of sap than otherwise it could, when not shaken by the rope?

Other facts serve to strengthen us in the theory of the bursting of the vessels by an excess of sap. The rust invariably commences upon the leaf; and the farmer thinks, and thinks rightly, that if it extends no farther, the grain will not be materially injured. Now how is this? If, according to the two Presidents of the Royal Society, Sir Joseph and Sir Humphry, that it is occasioned by the innumerable and invisible seeds of fungi floating in the atmosphere, and attaching themselves to the wheat, why does it begin on the leaf? Are these seeds possessed of the power of choice, therefore, the first comers settle upon the leaf, and leave the remainder for the more tardy parties? No, the leaf is more tender, more thin, less solid than the stalk. The tubes are not able to bear so great a pressure as the other tubes, and therefore, burst first. If the roots do not send in a greater supply, the grain is not materially damaged; but if, on account of the greater extension of the root, or from any other reason, more sap is sent in, the tubes of the stalk give way, and all is lost. The crop dies of plethora, as the doctors would say. Another argument in favor of our adopted theory is the manner in which many farmers south of us treat their grain. When it is too luxuriant and they fear the blast or rust, they either feed it or mow it down, and this they continue to do,

accordingly as experience and judgment dictate, till within six, eight or nine weeks of reaping time. By this operation the excess of food becomes in some degree exhausted, by being taken away from the field, until there is just enough left to fill out the crop, or the plant itself is checked and does not take up enough to split itself.

We are aware that many will tell you that observations with the microscope prove beyond a question that it is moss or fungi which destroys the plant. We are as willing as any one to subscribe to the utility of the microscope in aiding the eye in the research of minute objects, but there is a point beyond which the best made glass of the best optician cannot reach, and on the confines of this limit, things must appear indistinct and confused. Here we know from our own limited researches, is a fine field for speculation. An object viewed indistinctly through a microscope may be formed by the imagination into almost any thing, as well as objects seen indistinctly by the naked eye, be formed into ghosts and hobgoblins to the terror of the beholder.

Thus the sap which has run out of the sap vessels, and which becomes dried and laid up, particle upon particle, in a thousand varied forms may appear through the glass to be a forest of vegetation, or a mountain of rocks, or a cluster of grapes, or any thing else that an astonished or luxuriant imagination may liken them to.

We have dwelt longer upon this subject than we at first intended. We are still strong in the faith that winter wheat can be raised in Maine as well as in New York, but we must first learn how. A few failures ought not to discourage us.

(From the Delaware Advertiser.)

THE MERCER POTATO.

The best of all roots of the potato kind, called by this name, is the production of a neighboring state. It has been a question among our farmers for many years, whether it was produced by an improved mode of raising them, or whether it was a foreigner. We are at length enabled to settle this question, by the assistance of a kind friend. He says the species of potato called mercer, was originally raised in Mercer county, Pennsylvania, by a gentleman of the name of Gilkey, and are there called Nophannoeks, from the name of a creek which passes through that county. About twenty years since, this gentleman planted the apple, or ball of a potato, from which has sprung this delightful root.

HORTICULTURE.

(From the Southern Agriculturist.)

AN ADDRESS

Delivered before the Horticultural Society of Charleston, at the Anniversary meeting, July 10, 1853.

BY H. V. J. BACHMAN.

At the last anniversary of this society, the high and honorable duty was assigned me of addressing you on this occasion. I feel, and I acknowledge most gratefully, this proof of your kindness and favorable opinion; but I have to lament, that however zealously and ardently I am attached to the cause which is espoused by this society, I am unable to bring before you the result of much practical knowledge on the subject of horticulture, and that, therefore, some of the theories which I am about to advance, may not, in the end, bear the test of experiment. I am encouraged, however, to trust to your indulgence, whilst I attempt to discuss a subject on which I may not be practically as familiar as some other members of this society, under a belief that many important discoveries in horticulture still remain to be made—that, whilst many theoretical speculations may be demonstrated to be futile, and many experiments may fail of

producing the desired effect; yet, that this very failure may serve as a beacon to future travellers, and that every successful experiment will, when recorded, confer a benefit on mankind for ages to come.

Horticulture has two objects in view.

First:—The introduction and cultivation of such vegetables and fruits as may serve for the food or medicine of man.

Secondly:—The cultivation of trees, shrubs and flowers, which by their shade, fragrance, or beauty, may serve to refine and purify his mind, add to his pleasures, and awaken in his bosom sentiments of admiration to that being who in mercy to man has promised, that "while the earth remaineth, seed-time and harvest, and summer, and winter, shall not cease."

Time will not permit me to enter into a detail of the history of this art. Suffice it to say, that several of the ancients, and particularly Cicero, enumerated this as among the most pleasing occupations of the mind—as particularly adapted to the aged, and calculated to give health to the body, and afford agreeable exercise to the mental faculties. From this exhaustless store of human happiness, the poet has derived some of his greatest beauties, the philosopher some of his most interesting disquisitions, and the philanthropist some of the noblest plans for the amelioration of our race. How greatly is our pleasure in reading the works of Homer and Virgil—of Milton, Thomson and Cowper, enhanced by the continual references to this delightful theme. But not even the charms which Milton and Homer and Lucretius have sung—or the descriptions which Lord Walpole and Sir William Temple, in more modern times, have left us on this delightful subject, shall prevent me from entering into those more humble practical details with which the present age furnishes us. I proceed to remark that comparatively little was done in the science of gardening till within the last sixty years. Since that period, the justly celebrated national establishment of France, under the auspices of D. Saintaine, Jussieu and Thouin, has arisen, which contains every thing directly and remotely connected with this department of knowledge. It was not until 1804, that Sir Joseph Banks, aided by Sir James Edward Smith, and Mr. Thomas Andrew Knight, and a few others, instituted the Horticultural Society of London. Five years afterwards the Caledonian Horticultural Society was formed in Edinburgh, and from thence a fondness for the studies and labors of this art was by the aid of similar institutions diffused over all Europe. In some parts of Germany, the culture of a garden and fruit trees, forms a part of the education of the ordinary seminaries, and no schoolmaster is permitted to exercise that function without a certificate of his capacity to teach the management of the garden and the orchard. Travellers inform us that in Seville and Cadiz, the windows and balconies are every where filled with pots containing a great variety of the beautiful amaryllis, with the favorite polyanthus and narcissus, the gaudy tulip and other bulbs, and with ornamental jars of the geranium and the jessamine. The pink is there, as in every part of the world, a favorite flower, and even the lowest cottages have a few pots of the sweet basil, the daisy or the violet.

In France, among that gay and luxurious nation, the science of horticulture is cherished with the greatest enthusiasm. In Paris, alone, three courses of rural botany are delivered gratis every year—several classes are composed of upwards of two hundred individuals, some of whom are soldiers and cottagers, and men who are moving in the humbler walks of life. The garden of the Tuilleries are invaluable from their situation in the very centre of Paris, and from their being open at all times to all the world. Their walks are shaded with beautiful and airy groves, bordered with a constant succession of showy, flowering plants. In England, such have been the improvements, since the establishment of these societies, that no one can gaze upon their beautiful, well-

trimmed lawns, their gay parks, and the flowers that bloom around many a cottage, and climb over the lattice of the poor man's dwelling, without being convinced that a love for the beauties of nature rises spontaneous in the human heart; and that the more we cultivate it, the more we will be led to admire the works of God. An intelligent German traveller, speaking of the habits of the English people, makes these remarks—"we have visited the celebrated flower market of London, of which no German who has not seen it could have formed a proper idea; what chiefly struck us is that the greatest rarities and the most trifling articles are here exposed for sale together, and are both eagerly bought. The wealthy and the respectable Englishman who is a connoisseur, will purchase nothing that is common, for if pretty he has it already in his garden; and the poor Londoner who cannot afford to buy what is beautiful, will still obtain something green to decorate the window of his dark little attic, and give his last farthing for a bit of verdure." He speaks of the wonderful improvement in horticulture, and ascribes it to the influence of the horticultural societies, declaring, that although he had been forty years conversant with the raising of fruit, he had never beheld finer peaches, nectarines, plums, melons, grapes and pine apples than he saw there. Agents from some of the societies, have been sent into distant lands, to enrich their native country with the beauties of Pomona and Flora, and such has been their success under these exertions, that some of the most delicious fruits and beautiful shrubs and flowers that are known in the world have been introduced, naturalized and cultivated, and are now ministering to the wants, or adding to the gratification of man.

In 1818, a small number of enterprising and intelligent practical gardeners and nurserymen in the city of New York, formed themselves into an association, for the purpose of introducing such improvements in the cultivation of vegetables as they were competent to effect. Premiums were offered by the society, and in a very few years there was such an improvement in the products of their gardens, that the vegetable markets of New York, which before had been very indifferent, may now vie with those of any other city in our country. In the month of May last, I had the pleasure of attending their exhibition of flowers, which, for abundance, variety and beauty, exceeded any thing that I have witnessed. Similar institutions have arisen in Pennsylvania, Maryland and New England, and it is probable that Massachusetts now possesses the most flourishing and useful institution of the kind in our country.

The establishment of nurseries is but of a comparatively recent date, but still there are few valuable trees, shrubs, bulbs or flowers, that may not be found in the gardens of Prince, at Flushing—of Floy, Wilson, Hogg or Thorborn, in New York—of Buel and Wilson, in Albany—of Landreth or Carr, in Philadelphia, or of Noisette, who long has devoted himself to the cause in the neighborhood of our own city.

The reason why horticulture, until very recently, was with few exceptions limited to the culture of common culinary vegetables and fruit, is very evident. The wants and necessities of a young nation are generally so imperative that they have little time to attend to the ornamental and scientific departments of gardening. The introduction of luxuries requires time, leisure, and wealth.

Our own institution is but of very recent origin. We have met to celebrate our second anniversary. We have had to encounter difficulties on all sides. Some prejudices at first existed among some of our gardeners, who seemed to fear that we were associating for the purpose of obtaining and publishing to the world the secrets of gardening, which they had acquired after many years of experience, and which by increasing competition might eventually prove an injury to their business. These individuals could scarcely have

recollected that this society was principally instituted for their benefit—that scarcely an individual member was engaged in cultivating vegetables for the market; that the knowledge which we acquired, and the improvements which were made on the subject of horticulture, were all at their service; and that by improving the articles we increased the demand for their consumption. We believe that these prejudices have, in a great measure been removed.

Another difficulty with which we have to contend is, that those members of our society, who are planters by profession, and could aid us by their experience, are absent from us a portion of the year, and attend but little to their gardens, on their plantations, during the winter and the spring, since they are aware that in summer and autumn, when fruits and most of our vegetables are in perfection, they would be absent from their plantations, and therefore, could not enjoy them.

And we may further add, that the fierce political contest, in which our people have been engaged, had, in some measure (for a time, at least) diverted many active and good men from these useful and pleasing employments, to the study of the principles of government, and have sometimes led those who breathed the same air, and who once admired each other's gardens—interchanged the delicious fruits of the season, and presented each other with the rose, the pink and the violet—to regard each other as the enemies of their common country. These dark and unpleasant scenes, we trust, have now all passed away, and will soon be buried in oblivion; and nature, that is so full of harmony and love, that has covered the earth with fragrance and with beauty, invites us to repose in friendship together on the green lap of earth, beneath the shade of her majestic trees; and the Father of the universe seems to say, "let there be no strife between you, for ye are brethren."

Come then, let us unitedly engage in studies and employments which will not be confined to the sweets of Flora, or the apples of Pomona; our views will embrace a wider field, a more extended sphere of public utility. Whilst we are introducing new objects of horticultural industry, we may be able to diffuse botanical and scientific knowledge—contribute something to ameliorate the condition of the poor, add to the morals and the virtue of our people, and lead the contemplations of man from "nature up to nature's God."

The science of horticulture has not heretofore been held in that estimation to which it was certainly entitled. It was formerly pursued principally by persons in the humble walks of life—persons possessed of but little scientific knowledge, who obeyed the first impulse of nature and procured the bread of life by labor and toil. No wonder then, that nothing very interesting or attractive could be found either in the life or the employment of such an obscure uncultivated being. To my view, there are few states of existence less enviable than that of an ignorant man or woman working hard on the farm or garden, without having knowledge or science enough to be interested in their occupation, and in the scenes around them.

But it cannot fail to awaken pleasure in every virtuous and reflecting mind, to observe how generally a taste for rational enjoyments, as exemplified in the growing partiality for the study of natural history, and in the encouragement given to the various branches of horticulture, is superseding the sports of the field, and the revels of the banquet. The eager search after truth in the present age has, in some measure, redeemed the supineness of former times. The tree of knowledge, whose fruit was heretofore so inaccessible to men in the humble walks of life, has been freely plucked by all who choose to gather it. The obstructions which were thrown in the way by the ancient languages, and by the pretended hidden secrets of the art, have all been stript of their mysterious covering; a more general knowledge of what the soil is capable of producing, is diffused among the cultivators, a taste

for reading various valuable productions upon horticultural subjects has increased. A majority of the articles contained in the horticultural publications of England and Germany, are written by professed gardeners, who labor in the garden and green house, and we trust that the time is not far distant when our own excellent publication on southern agriculture will be enriched with the productions of the scientific and practical gardener. Although we are yet sadly deficient in our knowledge on these subjects, yet there are improvements of a very gratifying character in many portions of our land, and we hope that before many years the sciences of chemistry, botany, entomology, ornithology and conchology will be as regularly taught in our schools and private families, as are music and the French language at the present day, and this is certainly calculated to open a great source of pleasure and advantage to the rising age.

The advantages of science in horticultural pursuits do not appear to be sufficiently estimated, and in order to elucidate this subject, I beg leave to invite your attention to the observations and facts which I am desirous of bringing to your notice. I would endeavor to show you in what way ornithology, chemistry, entomology, and physiological botany are closely allied to, and inseparably connected with the science of horticulture.

The study of ornithology which is least allied to this subject, still presents strong claims. Man is known to look with a jealous eye upon all who oppose his interests. In obedience to this natural dictate of the passions, he not only grapples with him of his own species whom he views as his enemy; but he wages war on the beasts of the field, on the fowls of the air, and the insect world, and all that he believes is about to endanger the prospect of his success. In this way the innocent often suffer for the guilty, and the harmless bird that comes to add to our pleasures by warbling its sweet notes in our gardens and on our house-tops, or who is a positive blessing to us, by lessening the number of depredating insects, falls indiscriminately with the crow and the grackle at the sound of the murderous gun. Now all this does not usually proceed from a natural disposition to cruelty, but from ignorance. Without a suitable knowledge of the science of ornithology, we are unable to know which birds are injurious, and which are a positive benefit to the farmer—which ought to be banished from our fields, orchards and gardens, and which ought to be encouraged there by all the allurements in our power. Kalin tells us that when a bounty was set on the head of the little crow, in Virginia, (meaning probably some of the genus *Quiscalus* and *Icterus*, which go under the common name of black-bird,) which were destroyed at an enormous expense to the state, the insects so increased, that they would have bought them back again at any price. The purple grackle in New England was destroyed in consequence of the Governor's offering three-pence a head, and the result was, that insects multiplied so rapidly, that the herbage was destroyed, and the inhabitants were obliged to import hay from Pennsylvania and England. The poor wood-pecker is shot by every idle boy, because he is said to extract the juices of apple trees, when in most cases he is allured thither by the worm which is perforating the tree; and thus the bird on which we pronounce sentence of death, as on an enemy, has come to save the tree by feeding on its destroyer. The tyrant flycatcher, (*Muscicapa tyrannus*,) is called the bee-bird, and is slaughtered, when for one bee that he destroys, he relieves the farmer of a thousand insects that were depredating on his fields. Of the large family of flycatchers, (*Muscicapa*,) warblers, (*Sylvia*,) thrushes, (*Turdus*,) that constitute three-fourths of our land birds, scarcely one is in any respect a depredator on the property of man; but on the contrary, all greatly aid him in preserving his fields and fruits from devouring insects. Let then a sufficiency of ornithology be known by the cultivators of the soil to distinguish in the feathered race an ene-

my from a friend; and if the hawk, the crow, and the starling, are deserving of death for their depredations, let us spare the beautiful warblers, the thrushes and the wrens, that come to our gardens to claim the worm that is injuring us, and who are ready to reward us with a song.

The science of chemistry advances no inconsiderable claims to the attention of the horticulturist. In order to the successful rearing of plants, we must place them in soils adapted to their natures. It is well known that the soil calculated for the growth of one plant is often destructive to the life of another. The experience of the members of this society can testify, that the plants which flourish in the garden of one, will not succeed in that of another. The okra, the tomato, and the watermelon, succeed well in some soils, whilst in others they struggle through a sickly existence and die before they bring their fruits to maturity. The nettle haunts, as it were, the footsteps of man, and clings, as poetry might argo, in very sociability around his dwelling. This plant will not flourish but in a soil containing nitrate of potas, (*saltpetre*) a salt always abounding in the neighborhood of places where there is calcareous matter. Chemists inform us that every soil is composed of silica, alumina, oxide of iron, salts, and animal, and vegetable remains. The most important consideration is, in what proportions these must be mixed, in order to constitute a fertile soil. Alumina or clay imparts tenacity to a soil when applied. Silica or sand, diminishes that power, whilst chalk and lime have an intermediate effect: they render heavy soils more porous, and light soils more retentive. These simple facts are all important.—Two neighboring fields by an interchange of soils being often rendered fertile, one of which had before been too tenacious, and the other too porous. The experiments of Sir Humphry Davy, on the subject of soils, are full of instruction. He found that a rich black mold containing one-fourth of vegetable matter, had its temperature increased in an hour from sixty-five to eighty-eight degrees by exposure to the sunshine, whilst a chalk soil was heated to only sixty-nine degrees under similar circumstances. But the first, when removed into the shade, cooled in half an hour fifteen degrees, whereas the latter only four. This explains why the crops on light colored soils are in general so much more backward in the spring, but are retained longer in verdure during autumn than those in black light soils; the latter obtain a general warmth more readily, but part with it with equal speed. Coal ashes sown on beds, cause beans and peas, and many other vegetables to come up two or three days earlier than where no such application is made; it being a well-known fact that dark colored bodies absorb caloric more readily, and in larger proportions than those of a brighter hue. As an evidence of what can be effected by a combination of chemical and practical knowledge in the cultivation of the earth, it is only necessary to mention the experiments of the great chemist Lavoisier, in order to impress on the minds of his neighbors, the people of Levande, in France, the advantage of combining chemical and practical knowledge. He cultivated two hundred and forty acres on scientific principles. In nine years his produce was doubled, and his crops afforded one-third more than those of ordinary cultivators. I trust that these few hints will suffice to show how much may be gained in horticulture by a knowledge of chemistry.

Entomology too, a science but little known till very recently, lays weighty claims to the attention of the horticulturist. Wherever we go, we find the earth, the trees, the shrubs, and the air filled with thousands of living beings, assuming the most wonderful changes, and gifted with the most surprising instincts. Some of these, like the silkworm, the cochineal, and the earthenware, add to the wealth or luxury of man, or minister relief to his diseases. Others are destructive of his prospects, and the enemies of his repose. Some attack the roots of his trees and plants which

soon wither and die, whilst others fasten upon the blossoms, or upon the fruit, and all his bright prospects are blighted. The fair one who has reared with care and perseverance some favorite plant, finds it drooping and decaying in spite of all her vigilance, and is not aware that a worm may be at its root, or that some insect may visit it at night and deprive it of its buds and leaves; but she knows not the characters of either—she knows not where its eggs are deposited, at what season of the year she may apprehend its attacks, and is utterly unable to guard against it.

When the insect called the Hessian fly, made its appearance on Long Island, in 1776, it was wrongly conjectured that the Hessian soldiers, under the pay of the British government, had conveyed this evil along with them in their straw from Germany. The British government feared that it might be introduced into England, and took measures to prevent it. Information was sought by government from practical men in America, some of whom had lost their entire crop by the insect; and yet they were ignorant, whether it was a moth, a fly, or what they term a bug. Expresses were sent to ambassadors in France, Austria, Prussia and America. The information obtained was so voluminous as to have filled two hundred octavo pages, yet still so little science was possessed by the persons who gave information about the insect, and by those who met to ward off its ravages, that it was impossible to form any idea of its genus or character, till Sir Joseph Banks, an eminent naturalist, lent his aid in the investigation, and gave the nation the only information that could be relied on. An insect with a somewhat similar character actually made its appearance in England sometime afterwards. It threw the country into great consternation, as they feared that it might prove destructive to the staple of life; when Mr. Marsham, by tracing out the species, proved the alarm to be unfounded. Pursuing the history of this insect again in America, entomologists discovered its character and habits, and by sowing their wheat at a particular time in autumn, when it was too late for the insect to multiply before the cold weather set in, and when the plants would be too much forward to sustain much injury in the spring, the cultivators have, in a great measure, arrested its destructive progress, and thus science has lent her aid to agriculture, in averting evils, which at one time threatened to banish from our land the culture of the finest grain, with the exception of rice, which is found in the world.

The utility of entomological knowledge will farther appear from a circumstance which occurred in Sweden. The oak timber in the royal dock-yards had been perforated and greatly injured, when the king sent to Linnaeus, the father of natural history, to trace out the causes of the destruction of the timber. He detected the lurking culprit under the form of a beetle, (*Lymnæon nuce de.*) and by directing the timber to be immersed during the time of the metamorphosis of that insect, furnished a remedy which secured it from its future attacks. Another instance, which occurred among the elm trees in St. James' Park, London, between the years 1820 and 1821, is recorded. These trees suddenly became affected in a very singular manner. The bark fell from the stem and whole rows died. There happened to be a company of soldiers stationed in the Park, and as the trees were barked to about the height of the soldier's bayonet, the suspicion fell on some unfortunate recruits as having occasioned the injury, and they were arrested; but nothing could be proved against them. Persons were now employed to watch the Park at night, but still in the morning the bark was lying in great quantities around the roots of the trees. At the same time the elms in a grove at Cumberwell, near London, were also destroyed. This was ascribed to the effect of gas escaped from pipes used for lighting the road. Legal proceedings were commenced against the company for the removal of the nuisance. In this state

of things, William Sharpe M'LAY, an eminent naturalist, profoundly acquainted with the history of insects, was requested by Lord Sidney, to draw up a report on the state of the elm trees, for the purpose of referring it to the Lords of the Treasury. He discovered it to be a beetle, (*Hylæus destructor.*) belonging to the same genus as that which destroys the pines in Germany. By ascertaining its habits, he was enabled to point out a remedy, and the remainder of the trees were preserved.

Suffer me yet to call your attention to one other instance of the effect which ignorance, on the subject of entomology, is calculated to produce. A caterpillar of an unusual size and singular form, made its appearance on the trees of the Lombardy poplar, in the state of New York, some twenty years ago, as far as my recollection will now serve. The ignorant became alarmed; many idle reports were circulated; a dog was said to have been stung by one which occasioned swelling and death; rumor soon made it out to be a child; the newspapers circulated each idle tale. And now the work of destruction commenced—the axe was applied to the ornamental trees that shaded some of the finest streets of their villages. The same work of extermination was carried on at several farm houses and gentlemen's country seats. The stately poplars were levelled to the ground and burnt. The lover of nature remonstrated, but it was in vain to contend against the powerful current of prejudice. A little knowledge of the science of entomology might have satisfied the destroyers of those beautiful works of God, that the larva which they so much dreaded was harmless—that it would soon assume a chrysalis form, and after lying inactive for a short time, would put on wings of a brilliant hue, flit joyously on the air, and live on the nectar of flowers.

(To be continued.)

RURAL ECONOMY.

(From the Elgin Courier, published in Scotland.)

OBSERVATIONS ON THE MAKING, CURING, AND CASKING BUTTER.

A number of copies of the subjoined, having been lately printed in another form at the Courier office for one of our country gentlemen, we think we cannot do a more acceptable service to our agricultural friends than to insert it in this place. It was drawn up by order of the Agricultural Association, as the result of inquiries into the practice adopted in Ireland in the making of butter, and of the experience of some extensive curers in the county of Aberdeen.—*Ed.*

1st. The milk house or dairy should have no internal communication with any other building. It must be kept free from smoke, well aired, and no potatoes, fish, onions, cheese, or any thing likely to impart a strong or bad smell, should be kept therein. In short, nothing but the dairy utensils, which must be kept sweet and clean.

2d. The milk when brought in from the cows should be strained through a fine hair sieve or strainer, and when cool, put into sweet well seasoned oaken tubs, keelers, or milk-pans—the latter to be preferred. A tin skimmer, with holes in it, is the best for taking off the cream, which should always be churned while the cream is fresh.

3d. The churns whether pump or barrel, should be made of the best well seasoned white oak—and as cleanliness is of the first importance, great attention should be paid to the washing, drying and airing of the churns immediately after use, otherwise they are sure to contract a sour and unwholesome smell, which must injure the quality of the butter.

4th. The butter immediately after being churned, should be thrown into fresh spring water where it should remain for one hour at least, that it may grow firm; and, at the end of the third or fourth washing, some fine salt should be put into the water, which

will raise the color of the butter, and purge away any milk that remains among it. Before salting it is very essential that no milk or water be left, otherwise a strong smell and unpleasant taste will be the certain consequence.

5th. The butter thus prepared should be immediately salted. The proportions of salt may be from one and one-fourth to one and one-half ounce of scotch salt for the pound of butter—or, for the best stoved rock or bay salt one ounce for the pound. But when butter is not intended to be kept through the winter and spring, or for any long period, the quantities of salt above recommended may be somewhat reduced, the curer exercising his own judgment in doing so.

N. B. In Ireland, the use of salt and salt-petre is recommended, in proportions of one ounce of stoved rock or bay salt, and one-fifth of an ounce of salt-petre to the Aberdeen pound.

6th. It is a very injurious practice to keep a making of butter uncured to the next churning, for the purpose of mixing the two together. This mode invariably injures the flavor of the whole, and renders it of too soft a quality ever afterwards to get firm.—This applies to curers who are the producers of the butter; but as the greatest quantity of butter in this country is collected and cured by merchants, they are particularly cautioned against the practice of throwing the fresh butter together, and retaining it in that state for days, until they have collected what they consider a sufficient quantity to commence curing—the butter treated in that manner is invariably found inferior to what is salted after churning. Should, however, there not be a sufficient quantity collected in one day to fill a package when cured, the quality of the butter may in a great measure be preserved by giving it a partial salting and covering it over with a clean linen cloth dipped in pickle, and placing it in a cool situation. Country dealers who are in the habit of sending carts through the districts where they reside, to collect the butter should endeavor to arrange it so between themselves and the makers of the butter, that it is churned upon the day it is called for.

7th. When the butter is cured, it should be tramped firm into the firkin with a round, wooden trampstick, of sufficient weight and thickness. The firkin should be filled up to the crose, and then covered over with a little of the purest salt—sufficient room merely left for the head of the cask, and must be well secured, to exclude air, and to prevent the pickle from getting out.

8th. The Liverpool stoved salt, or Portugal St. Ubes, or bay salt, is from strength and quality, always to be preferred. All salt must be kept quite dry, and at a distance from fire, to prevent the first bubbling the smell of the smoke. If kept in a cask, a little unslaked lime placed under it will prevent it from drawing moisture from the ground.

9th. The mixing of the salt with the butter should be done in wooden dishes, after the water and milk are completely expelled, and no time should then be lost in tramping it into the firkin which will make it draw even and firm.

10th. The milk of new calved cows should never be set for butter until at least four days after calving, as a small quantity of beast milk butter will injure a whole firkin. The practice of scalding cream in cold weather should also be avoided, as cream thus treated will never make good butter.

11th. Great care should be taken not to steep the firkin in boggy or unwholesome water. Nothing but the purest spring or clear running water should be used for that purpose—and the firkins should be rendered perfectly dry inside after being steeped, either by long dripping, or being rubbed by a smooth towel. Old butter should never be mixed with new—and the lining of the casks with inferior sorts, or grease butter, is a practice which cannot be too much reprobated.

12th. The casks ought to be made of the best oak or ash, (the former to be preferred,) and the largest

size should not exceed eighty-four pounds gross, that being the size used in Ireland, and most convenient and saleable in the London market. The casks should be tight and well hooped. Beech, plane, ash, &c. should never be used, as that quality of wood is more apt to absorb the pickle; and independent of the injury thereby occasioned to the butter, it will often lead to dispute about the tare.

To render these observations more complete, it might be thought necessary to point out the injurious, and even nefarious practices, which more or less prevail in the making of butter throughout the country; but as a perseverance in such practices must ultimately have the effect of entirely destroying this profitable branch of agricultural industry, it is hoped the makers of butter will see it to be their own interest to produce nothing but butter of the best quality, and that these mal-practices, which are perfectly known, will be discontinued. The dealers in the country have it in their power to put a check to them—and it is expected they will do so, by refusing to purchase from those who adopt any artificial means to hasten the making of the butter, or to increase the quantity, while the quality is thereby deteriorated.

(From Goodsell's Genesee Farmer.)
BEEES.

MR. GOODSSELL: *Wheatland, July 29, 1833.*

If you should consider the following plain communication of facts, worthy of a place in your paper, you are at liberty to insert it, hoping that it may prompt some other person to convert a useless garret into a source of amusement and profit.

Much has been written of late respecting bees. Two years since I learned that bees might be kept to advantage in a garret. At that time I was building a stone house, two stories high, and directed the mason to leave a hole in the end eight inches wide and one and a half high; the bottom level with the garret floor, having determined to give this method a fair trial. I delayed putting in the bees until I had a swarm last year. The swarm was first put into a hive twenty inches deep, and ten in diameter. I placed this hive on the floor six inches from the wall, and about the same distance from the chimney opposite the hole left in the wall. They nearly filled the hive last year, and this season they have not only completed the filling of the hive, but have filled the space between the hive and the wall, and also between the chimney and hive and are now building on the outside of the hive opposite the chimney, and have raised the comb several inches above the hive. Although the bees have increased in numbers to that extent, that they cover the wall for two feet above the hive yet they continue to work well, and there is no appearance of their being disposed to swarm. I have one inconvenience with them, if a door or window is open at the end of the house they sometimes enter by mistake where they often remain, as Ulnus says, "butting their heads against the window," until they fall down and die if they are not turned out of doors. I have given the bees the whole of the garret which is twenty-two by thirty-six feet, no light is admitted except by the hole where they enter, which hole I fear may prove too small for them, hereafter should they continue to increase, as it now appears to be filled with bees passing in and out, but none are seen lying about the outlet as is the case when the common hive is used.

LAWSON HARMON, Jr.

(From Goodsell's Genesee Farmer.)

THE HORSE RAKE.

A horse rake may be procured at an expense not exceeding two dollars. It is constructed thus:—Take a stick of timber, of any stout wood, ash, chestnut, fir, or spruce will be sufficient, ten feet long, if your mowing lands are free from obstructions, and if obstructed with stumps or rocks then shorten the head

of the rake to your convenience. The rake head may be three and a half inches by two and a half in diameter, or as you please. The teeth should be twenty-two inches long, and one inch by one inch and a half in diameter, and set firmly into the head about two inches and a half apart. These teeth may be made of firm white ash, or walnut, or oak. The teeth should be made at the end to turn up, so as to run on the ground like a small sled, and not into the earth. On the top of the head should be fixed about seven small standards, eighteen inches high, to prevent the hay's falling over the head. In the centre of the head fix two handles, such as are usually fixed to ploughs, at a suitable distance to guide and steady the rake. From the ends of the rake extend a rope of the size of a cart rope, to fasten to the horse's collar. The distance of the horse from the rake may be such as to leave room for the hay to gather. Observations will soon direct the length of the ropes. Care must be used to have the teeth set even and firm, that they may run near the earth. This rake may be used to collect the hay into winrows, or to pile it up into heaps; and it is useful in all grain fields, to glean the scattered grain, and to lay down the stubble close to the earth, to rot and promote vegetation.

This rake may be considered a labor saving machine and is particularly useful, when the place of deposit for your hay is in the same field where the grass is cut, whether it is to be stacked or put into a barn; as you can then gather large piles out of the winrow, and draw them direct to the place of deposit, at one and the same operation, thereby saving the once pitching of your hay.

It is said by one who is acquainted with the machine, that it will enable one man, with a steady horse and boy, to perform at least as much work in gathering hay into winrow and piles, as six good men can accomplish, and as clean as is commonly done in raking by hand.

Those who occasionally cut grass for hay on smooth tillage ground, or have smooth meadows, will find this implement worthy of their attention.

MISCELLANEOUS.

(From the Maine Farmer.)

FARMERS AS THEY WERE, AND FARMERS AS THEY ARE.

MR. HOLMES:

Up River, July, 1833.

I am an old man, and an old fashioned man, and not used to writing for the press—you must therefore let me tell my story, and make my complaints in my own way.

This seems to be a day of improvements, as it is called—we have our agricultural societies, our temperance societies, and all kinds of machinery, so that it seems as if our labor is nothing what it used to be when I was young. But just let us take a look and see how much better off we are than when every one raised his corn in his own way, drank their grog when they needed it, and manufactured their wool in their own family. There is a great deal said about getting rich by raising wool—true, it brings a fair price; but if every one makes out no better than I did with mine, I think they will not make a fortune. I have something of a family, and have been in the habit of manufacturing our wool at home. I formerly kept thirty or forty of our native sheep, which produced a large fleece of stout, strong wool, and a fine flock of lambs which were early coveted by the butchers. But as improvements increased the women complained that the wool was so coarse they were ashamed to wear it, so I sold them to the butcher, purchased a flock of merinos, which were curled up and frozen all winter, produced few lambs which were worthless to eat; but the wool pleased the woman, and things went on finely for a number of years; at length it was thought

that cloths were so cheap that it was best to sell the wool and buy our cloth. The girls said it was too hard work for them to spin and weave, and that it was out of fashion, and ought not to be done, when there were so many factories. So they persuaded me to sell the wool, for they said Miss Finesse was agoing to open a school at the village for young ladies to learn drawing and the French language, and they must attend and therefore could not spin the wool, and that John was agoing to the seminary this fall and intended to keep school next winter, and he intended to have a suit of broadcloth. So I found I must sell my wool or hire it spun and woven, and that is impossible, for there are no girls that are able to spin and weave in these days of refinement. So I turned my wool into a large sack for market. The girls said as I was agoing down they would go with me, for they wanted to get a few "notions" to equip them for their school. I expostulated with them to know what advantage it could be for farmers' daughters, to learn to jabber French—(It is true, they said, they were farmers' daughters, but were in hopes not to be farmers' wives,)—they said it was fashionable for ladies to talk French, and they would jabber together a whole afternoon, and make remarks on when and what they pleased, and the company would know nothing what they said. As to the expense, they thought I could afford it as well as Squire Pettifogger, his daughters were going, and we all know that all the money he gets is for making wigs, and that, they say, has almost failed him. So the girls must go and get their "notions"—the old mare was harnessed into the chaise which I bought a few years since, for the women thought it would be so convenient to go to mill with. I found ready sale for my wool sack and all. I pocketed the money, when the girls invited me to go shopping with them. They made purchases at the milliners, the dress makers, and to almost every store where there was finery, the drafts upon the purse were frequent and large. I told them I thought they had bought about enough, but I began to fear for the money which I calculated to pay my taxes with, they thought they had yet bought but little, and the store keeper thought I ought to indulge them as they were going to school to learn French, and that the French people were the politest people in the world, and their ladies the most and politest of any nation, and their dress the finest—so he tucked off a line of his grey gowns, and then we concluded to go home. The finery was all tied up in a pocket handkerchief and tucked into the chaise box—it was much more portable than my large sack of wool. After getting home, one of my neighbors called in, to whom I owed a dollar for shearing sheep, and wished me to pay him, as I had sold my wool. I drew my purse, and found in it four and six pence, and a few coppers. I then rummaged my pocket book, and found a dollar which had been there perhaps six months. I told him to call again, as I could not conveniently make the change.

Now you see the sad dilemma which I am in—my wool all gone, which, if it had been manufactured at home, would have made two or three new suits for the whole family from tip to toe, good enough for a congress man. And John has not got his suit of broadcloth to wear to the seminary, to say when, and pay the taxes, we shall be obliged to sell a yoke of the steers or one of the colts.

I cannot see, with all our boasted improvements in agriculture and manufactures, that we are any better off than we were forty years ago. If there are any laboring under the same burthens with myself, (which I fear there are,) I wish they would make it known so that we may form a society, or an anti-society, to see if we cannot get back to those good old days when our wives and daughters could spin and weave their wool, and willingly wear it—I would not wish to go back to when our mothers carded, spun and wove their wool.

AN EMIGRANT FROM THE OLD COLONY.

Prices Current in New York, August 10.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 15 1/4 a 17 1/2; Upland, 14 a 17; Alabama, 15 a 17. Cotton Bagging, Hemp, yd. 13 a 21 1/2; Flax, 21 a 15. Flax, American, 20 a 22. Flaxseed, 7 bush clean, 15.00 a 15.25; rough, 13.00 a 14.00. Flour, N. York, bbl. 5.50 a 5.56; Canal, 5.62 1/2 a 5.75; Balt. How'd st. 6.25 a 6.31 1/2; Rhd city mills, — a —; country, 6.00 a 6.12; Alexandria, 5.87 1/2 a 6.00; Fredericksburg, 5.87 1/2 a —; Petersburg, 5.87 1/2 a —; Rye flour, 3.62 1/2 a 3.75; Indian meal, per bbl. 3.75 a 3.87 1/2, per bhd. 16.50 a 17.00. Grain, Wheat, North, 1.12 a 1.16; Vir. — a —; Rye, North, 75 a 76; Corn, Yel. North, 75 a 76. Barley, — a —; Oats, South and North, 38 a 40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Peasions, Beef, mess, 10.50 a 10.75; prime, 6 25 a 6.50; earco, — a —; Pork, mess, bbl. 15.75 a 16.00; prime, 10.62 1/2 a 11.75; Lard, 9 a 10 1/4.

A FARM TO LET.

To let, a good farm, situated less than five miles from town, on one of the principal turnpike roads. There are about eighty acres under cultivation—excellent buildings of every kind—an abundance of wood and of the best water—two extensive and select apple orchards—two large ice-houses and ample ponds of spring water that never fail to freeze. It is well calculated for a hay farm.—Apply at the American Farmer Office. Aug. 16—21.

TIMOTHY AND HERD'S GRASS SEED.

A few bushels of each for sale—Timothy at \$3.50 and Herd's Grass at \$1.—At the American Farmer Establishment, by I. I. HITCHCOCK.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:
One full blood Bull, twenty months old, sired by Bolivar, out of a first rate imported cow. Price \$200.
One full blood bull, two years old—a very fine animal. Price \$250.
One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, fifteen months old, from good stock, seven-eighths Durham. Price \$225.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

Address

I. I. HITCHCOCK.
Amer. Far. Establishment.

AULT'S CABBAGE SEED.

Just received from England, my usual supply of first rate Cabbage Seeds, consisting of the following kinds, viz: Early George, Early York, Bullock's Heart, Early Harvest, Wellington, Penton, Durham and Imperial.—These seeds are raised by one of the first horticulturists in England, and without controversy, surpass all others yet brought to this country, for a spring crop. It was from Ault's Bullock's Heart cabbage seeds that Mr. Dorsey raised the cabbage that took the prize at the Horticultural show in this city last May. It is needless to say more in their praise, they having been cultivated extensively, not only round this city, but through the United States for several years. The time to sow these seeds, is from the 8th to the 15th of September, the price is \$1 per pound, or 3 1/4 cents per ounce.—Printed directions for their cultivation, describing the proper situation, soil, manure and management of these cabbages, will be given gratis, with each parcel of seed. Orders, with remittance, from all parts of the United States, postage paid, will be promptly attended to, if directed to

SAMUEL AULT,
76 Bridge street, O. T. Baltimore,
Second door above the town clock.

A BULL,

One year old, sired by Bolivar, out of a very deep milker of fifteen-sixteenths Durham blood, (consequently he lacks but one thirty-second part of being full blooded,) will be sold for \$150. Inquire of

I. I. HITCHCOCK,
American Farmer Establishment.

WANTED, A BAKEWELL RAM,

One year old or more, for which a fair price will be paid. Inquire of

I. I. HITCHCOCK,
American Farmer Establishment.

A DEVON BULL,

Six years old, a first rate animal in every respect, for sale low. He is believed to be decidedly the best animal of the kind in Maryland. Price \$200.

Address I. I. HITCHCOCK,
American Farmer Establishment.

TALL MEADOW OAT GRASS SEED.

Just received at the American Farmer Establishment, 100 bushels Tall Meadow Oat Grass Seed, of first quality, just harvested and for sale, at \$2.50 per bushel, by

I. I. HITCHCOCK

EARLY YORK CABBAGE,

And all other GARDEN SEEDS, suitable for fall sowing, are for sale at the American Farmer Seed Store, by

I. I. HITCHCOCK

AGRICULTURAL IMPLEMENT AND SEED STORE.

J. S. EASTMAN, No. 36 West Pratt-st. keeps constantly on hand a supply of his Patent Cylindrical Straw Cutters of the various sizes, which he will warrant to cut as much, according to their size, and to be decidedly superior in every respect to any similar machine made in this country.

Also, very superior Rag Cutters, for the use of Paper Mills.

Gideon Davis' Improved Patent Ploughs, of all sizes, with wrought and cast shares, and all kinds of castings for those ploughs by the piece or by the ton, as likewise for horse powers, on as reasonable terms as can be had elsewhere.

Wheat Fans, Corn Shellers, Threshing Machines, Harrows, Cultivators, &c. Likewise superior Cast Steel Axes, Hay and Manure Forks, and Scythes at wholesale and retail. Shovels, Spades, Hoes, &c. and all repairs done at short notice.

Field and Garden Seeds. Such Grass Seeds as are in market will be kept for sale. My assortment of Garden Seeds is not so extensive as advertised by some, but such as I shall offer for sale may be relied on as genuine. The following I could furnish at wholesale, viz: Superior Early York Cabbage, and Long Scarlet Radish Seeds, and Early Frame Peas, the latter raised by Richard Cromwell, Esq.

TURNIP SEED, BUCKWHEAT, &c.

400 lbs. White Flat and Red Top Turnip Seed.

100 lbs. Ruta Baga or Swedish do do

The above is of the present years' growth and raised under the immediate superintendence of Robert Sinclair, whose long success in raising this article warrants us in recommending it with the greatest confidence.

Also, Early White Dutch Tankard.

Yellow Bullock and Yellow Stone Turnip.

200 lbs. Fall Radish Seed, consisting of White and Black Spanish, Long White Summer, &c.

100 lbs. prime London Early York Cabbage Seed, Early George, Green Savoy, Flat Dutch, and many other kinds suitable for Fall Sowing.

IN STORE:

50 bushels Seed Buckwheat.

100 bushels Herds Grass.

50 bushels Tall Meadow Oat Grass.

200 lbs. Canary Seed.

1500 lbs. Yellow Lozenz Seed.

150 lbs. Yellow Mustard Seed.

WANTED.—Clover, Timothy and Orchard Grass Seed, for which the highest price will be given.

July 13.

SINCLAIR & MOORE.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is no change in the prices of flour, nor is there indeed any business doing of consequence. The wagon price of Howard street flour remains at \$6. Wheat has declined still further, and is selling within the rates of our quotations.—There is scarcely a variation in any other article. Our quotations of wool are from the last actual sales.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crep., common, 8.00 a 5.00; brown and red 1.50 a 6.00; line red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Line yellow, 18.00 a 25.00.—Virginia 4.00 a —.—Happahamock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 300 hds. Md.; 219 hds. Ohio; and 14 hds. Ky.—total 823 hds.

Flour.—best white wheatfamily, \$6 75 a 7 25; super Howard-street, 6 12 1/2 a 6 25; city mills, 6 12 1/2 a 6 25; city mills extra 6 50 a —; CORN MEAL bbl 3 62 1/2.—GRAIN, new red wheat, 1.12 a 1.16; white do 1.15 a 1.25.—CORN, white, 63 a 64; yellow, 64 a 65;—Rye, 62 a 63.—OATS, 28 a 31.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED 8.00 a —.—TIMOTHY, 3 25 a —.—ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2 25 a 2 50.—Herd's, 1.00 a —.—Lucerne — a 3 1/2 lb.—Barley — FRANKLIN 1 37 a 1 50.—COMMON A. 14 a 15 lb.——a 18 Alb 14; 16 Penn. 14 a 15; N. Car. 14 a 16 Upland — a 17.—WHEAT, hds. 1st a 29 1/2;—in bbls. 30 1/2 a 31 1/2.—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40. Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do. 25 a 26; common, 25 a 26; fleeces, Russia, ton, \$170 a 180. Country, dew-rotted, 6 a 7c lb. water-rotted, 7 a 8c.—Feathers, 37 a 38;—Plaster Paris, per ton, 4.12 1/2 a —; ground, 1.50 a —bbl. Iron, gray pig for foundries per ton 33 00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sns. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial; Gama Grass—Letter from N. Herbmont on the Gama Grass; probable Botanical error corrected.—Letter from John Love, on the Early Corn raised by the Editor of the American Farmer—Steel Trap to catch Rogues—Account of an Agricultural Excursion, made into the South of Georgia, in the Winter of 1832, by John D. Legare, Editor of the Southern Agriculturist, continued.—Cause of the Rust in Wheat—Mercer Potato—An Address delivered before the Horticultural Society at Charleston, at the Anniversary Meeting, July 10, 1833, by Rev. J. Bachman—Observations on the Making, Curing and Casking Butter, as practised in Ireland—Raising Bees in Garrets—Use and Manner of Making the Horse Rake—Farmers as they were, and Farmers as they are—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL

Agricultural and Horticultural Establishment:

COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

② An extra number of the Farmer, containing: prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

③ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, AUGUST 23, 1833.

PRICES OF WHEAT, COMBINATIONS AMONG DEALERS, &c.—In recurring to this subject we take leave to assure the Editor of the *Easton Gazette*, that nothing but a desire to correct an important error which we conceive detrimental to the interest of the wheat growers, as well as harassing and vexatious to them, could induce us to notice his article on this subject, in the *Gazette* of the 17th inst. The style and manner of that article are any thing but courteous, or such as one gentleman has a right to expect from another. And we shall even now address ourselves to the wheat growers, and allude to the writer of that article, only so far as may be necessary in refuting his assertions.

We also request the wheat growers to understand distinctly, that we have no interest separate from theirs on this subject; that every inducement which usually operates upon the conduct and opinions of men, such as patronage, fellowship of feeling, coincidence of pursuit, &c. &c. operates fully as an inducement to us to advocate their side of any question in which their interest is involved. We have not a single Baltimore miller or dealer in wheat on our list of subscribers; nor is there a single one among them that we can call a personal friend, or that we can claim any thing more than a mere business acquaintance with. This we hope will satisfy them of the fact that we are not actuated, as the writer in the *Easton Gazette* insinuates, by motives originating in the *patronage* and *companionship* of the millers and dealers in wheat. But having for many years been intimately acquainted with the mode of doing business among the dealers in wheat; passing among them daily and observing their transactions, seeing them make purchases, hearing them bargaining, &c. &c., we have become well informed as to the truth or error of the charges brought against them by the writer in the *Gazette*, and hence conceive it our duty to the wheat growers to set the matter right. We therefore say, and pledge ourselves for the truth of the assertion, that the charge against the millers and dealers in wheat of combining for the purpose of regulating the price of wheat, reducing its price, &c. is totally unfounded.

The writer in the *Easton Gazette* says, "All know that the dealers in grain in Baltimore, meet every Monday or Tuesday in the week, during the active season of wheat sales, to fix the price to be given for grain." This assertion, we positively pronounce untrue. There never was such a meeting in Baltimore; nor did the Baltimore dealers in grain ever meet, or ever consult, on any such business. There is, indeed, less combination and consultation among them than any other class of men we are acquainted with—because there is none at all. And we know the truth of our assertion in this respect from a source scarcely accessible to the dealers themselves. It is our business to go round among them several times every week, to ascertain the prices of grain, flour, and other produce, for our price current; and in doing this, we visit them all very often. This gives us an opportunity of observing the transactions of all;—which is a source of information that no one of the dealers themselves can, or at least ever does, command. If the dealers and millers met and fixed upon a price for wheat, all we should have to do would be to go to one of them and get a list of prices for the week; but this cannot be done. We must go among them all, get each one's quotation, and then make the best average we can for our price current.

The mode of selling and purchasing wheat in Baltimore is as follows. Some wheat growers send their crop to a commission merchant, others come with it, and others send it in charge of the captain; which ever it be he takes a sample of it, and goes to the millers and dealers. The first he goes to, probably says,

he does not want to buy, the next offers him \$1.12½, the next \$1.12, the next \$1.11½, the next \$1.11, &c. &c. He at last finds that the first offer of \$1.12½, was the best, and he returns and tells him he may have the cargo; but while he was gone among other dealers, the first had bought a cargo, or as much as he wanted, and the seller has to go the rounds again. This is often the case, and it is not uncommon for the seller to be obliged to sell for a cent, and sometimes, two or three cents lower than the first offer. He, however, sometimes tells the first dealer, that if he cannot get more he will return and let him have it at the price he offers, and if the dealer consents, he can return any time during the day and receive the price. It is quite common for the value of wheat to be so exactly established that a seller shall receive the same offer, or within a quarter or half a cent, from every dealer. It is from this circumstance, that the writer for the *Easton Gazette* draws his conclusion, that there is a combination among them. Now to us it is proof of the reverse. The qualities of wheat vary so far, that it would be impossible to fix an exact price to fit a parcel that had not been seen. How could the various qualities be designated? The conspirators might say, that the price for the best white wheat should be \$1.30; but how could they say what the various grades of inferior should be? But when a parcel of wheat is offered to a miller or dealer, he is at once able to say what it is worth, and in times when the market is settled, it is not strange that every dealer and miller in the city should set exactly the same price upon the article—if they did not, it would argue that some of them were either bad judges of wheat, or had some pressing call for a particular kind, or did not care about purchasing.

There is every year immediately after harvest a demand for new wheat to a small extent, that causes an extra price to be offered. For instance one miller has contracted to deliver on the 1st August, one thousand barrels of fresh flour, made from half old and half new white wheat. The time approaches for the delivery, and he has not been able to get the new wheat. A cargo at length arrives, and other millers being in the same situation, a competition for it commences, and to secure it, five, ten, or even twelve and a half cents above the true value, is given for it.

And we will say that the cargo was sold for \$1.40. On the return of the boat it is reported that Mr. L. obtained \$1.40 for his wheat, and immediately all the wheat in the neighborhood is cleaned out and sent to Baltimore with the expectation of getting the same price. But when all this wheat arrives, the causes that operated to the enhancement of the first cargo so much above its value, have ceased to exist, and only \$1.25 to 1.30 can be obtained for it. This is a true picture of the circumstances such as we have often witnessed. Now in this there is no unfair dealing—unless it be unfair to give a man more than his wheat is worth. The other wheat growers get as much as they would have got had this circumstance not occurred, and hence there is no cause of complaint.

Other causes often operate on the prices of wheat. Long continued head winds often prevent the arrival of vessels for two or three weeks, and in the mean time all the wheat in market is ground up, and orders remain unfulfilled. At length a cargo arrives, and the necessity for wheat to supply existing orders compels a dealer to pay an extra price; but this necessity exists no longer than the head winds continue—the first change, brings up whole fleets of boats. Circumstances are now at once reversed; instead of a scarcity we have a glut of wheat in market, and of course prices are depressed to at least the true value of the article; but surely no one could expect to get the extra price paid during the scarcity, for wheat during a glut of the market.

Another circumstance that affects the price of wheat should be mentioned. It is well known that new wheat does not yield as much flour as old, the

difference being equal to 5, to 7 or 8 cents in the bushel in favour of old wheat. In the summer also the water is so low that the mills cannot grind one third of the time; but their expenses are the same as during times of plenty of water. Under such circumstances flour cannot be made at the ordinary prices, and hence it is sold at a price disproportioned to that of wheat, and this is considered by the writer in the *Easton Gazette* as an evidence of combination, &c.

The writer in the *Easton Gazette* also asserts that all the flour that has been or can be made before the 10th of September, is engaged at about \$6.50 per barrel. This we assert positively has not the shadow of foundation in truth. There is not a single contract existing in Baltimore that we can hear of, on terms any thing like those mentioned; nor is there contracts existing at all for any considerable quantity of flour. City Mills flour was selling, or rather was held (for few sales could be effected,) on Monday and Tuesday last, at \$6, and millers would have been glad to sell at that price. One miller said he would give the writer of the article in the *Gazette* a check for \$500, if he would prove his assertion true; and well he might, for he had a pretty large lot of flour he would be glad to sell at a less price than \$6.50.

In conclusion we beg our agricultural friends to be assured that if any such unfair dealing as that charged to the dealers in wheat—combinations to fix prices, &c.—were to occur, we should be sure to know it, and as sure to expose the transaction. We consider ourselves as sentinels to guard as well as cultivate, the farmers' interest, and we shall not fail in our duty. But it must not be expected of a faithful sentinel to cry wolf, wolf, when there is no wolf.

The publisher of this paper is very desirous to obtain No. 1, of vol. 3, of Mr. Skinner's *Turf Register*. If any gentleman can send it by mail, he will confer a favor which will be reciprocated in any possible way with much pleasure.

ROCK OF DUNBARTON CRAB APPLE.

Nursery at Linnetan hill, near Washington, D. C.)
MR. I. I. HITCHCOCK: August 16, 1833.)

Dear Sir.—I yesterday forwarded to you, by Mr. Wilson, of your city two branches of fruit, from an apple tree now growing in my grounds, though it somewhat resembles the Siberian crab, it is evidently superior to it both as an ornamental and preserving fruit—it originated in my nursery. (as I believe from the seed of the Hughes crab,) it is its first bearing and though not more than an inch and a half in diameter at the ground, has produced near two hundred apples; in the same basket you will find specimens of two other sorts of crabs, both called Siberian crab here, one of which is the genuine.

You will please to deliver them with my respects to the Committee of the Horticultural Society on fruits—I have named mine the Rock of Dunbarton crab, after the original name of the tract of land on which I reside. I have taken means to propagate it extensively, and shall have a supply of the trees for my customers the fall of eighteen hundred and thirty four. Yours, &c. JOSEPH PEIRCE.

FOREIGN MARKETS.

LONDON MARKETS, July 18.

COTTON.—The market continues firm and advancing.

LIVERPOOL.—MONDAY EVENING, July 15.

The sales of Cotton on Saturday and to-day are about 8000 bags, at the prices of Friday, though perhaps, in some instances, at a trifling concession on the part of holders.

CORN MARKET, Monday, July 15.—During the last seven days the supplies from Ireland have been moderate, especially of Wheat and Oats.

AGRICULTURE.

(From the Farmers' Register.)

THE FOUR SHIFT SYSTEM.

The best rotation for James River lands, or any good Wheat and Corn soils

I imagine no one will deny that the best rotation of crops is that which yields the greatest profit to the farmer, and at the same time enables him to improve his land the most rapidly. The great object is to combine both *profit and improvement*. By some systems, you may improve faster than by the above, but then you make much less profit; and by none, in a series of years, will you make more profit with the same improvement.

I think I cannot establish the above theory in a more satisfactory manner than by giving a concise account of the system practised on a James river farm for the last seventeen years, with what success. I leave the reader to judge from the product. In the year 1816, I came to live on Shirley, a farm of nine hundred acres,—six hundred and fifty of which were cleared, and which had been in the hands of overseers for many years previous, who cultivated it on the old fashioned system of three shifts—that is to say, the first year in corn, second in wheat, and third in pasture—the most ruinous system that could be invented, taking into consideration the shallow ploughing, and waste of manure, or almost total disuse of it. By this system, the farm was so much impoverished, that it barely supported itself two years out of the three, when the two best fields were cultivated; and the third year, they had to bring corn to support it from other lands at a distance. The whole farm was covered with galls. I merely mention these things to prove the impoverished state of the land.

I will also state the crops reported to have been made previous to my coming here to live. From twelve hundred to fifteen hundred bushels of wheat, (sometimes not merchantable,) and four hundred to six hundred barrels of corn on either of the best shifts of two hundred acres each, was considered great cropping by the overseers; and seven hundred to one thousand bushels of wheat, and three hundred to four hundred barrels of corn on the third shift of two hundred and fifty acres, was considered still better, as that was the poorest. This was about six or seven bushels of wheat, and two or three barrels of corn to the acre, on the best fields, and much less on the poorest; so that it may be supposed the land must have been very much exhausted, and the management very bad. When I first came home to live I knew nothing of agriculture, and for the first three years continued the three shift system. But I soon saw that the overseer knew little or nothing of his trade, and what little he did know, did not practice; so that I dismissed him as soon as his term expired, and employed, for 1817, a man who was industrious, and one of the best corn makers in the state, (having been all his life in the great corn country on the Pamunky.) From him I learnt how to make corn, but he knew nothing of wheat, clover and plaster, or any of the present modes of improvement. However, by the aid of good ploughing, and collecting all the manure which had been neglected for years on the farm, he made a better crop of corn on the poorest shift, than had been made for many years back, even on the best. He made eight hundred barrels. His crop of wheat in 1818, following this crop of corn, was indifferent, (being still on the three shift system,) only eleven hundred and fifty bushels. I saw that there was something wrong about this system, and began to read a little on the subject of agriculture, and soon discovered that the three shift system was totally wrong; and although I sowed clover and plaster, it would not answer. At the same time that I began to read on the subject of agriculture, I went frequently to visit my good friend, John G. Mosby, who then lived in

Curles' Neck, on James river, and to whom lower Virginia, or at least lower James river, is more indebted than to any other man in the state, for the introduction of clover and plaster, and the fallow system—the three forming the sheet anchor on a farm; for when all seems to be lost, they will save the ship.

From my friend J. G. M. (who, by the by, was one of the best farmers in the state,) I obtained a great deal of useful information; and in the fall of 1818, adopted the four shift system, by throwing out the poorest field of two hundred and fifty acres, and making a standing pasture of it, and cultivating the other two shifts in four fields of one hundred acres each, instead of two of two hundred acres each. This change required annually one field of one hundred acres in corn, a second in wheat after corn, a third in clover, and a fourth in wheat on a clover fallow; and the succession of crops on each separate field was in the foregoing order, of 1st, corn—2d, wheat—3d, clover—4th, wheat. The standing pasture prevented the necessity of grazing the cultivated part of the farm, except occasionally. The effect was like magic. The crop of wheat after the clover fallow, in 1819, was 3715 bushels, (which I carried to New York, and got a high price for.) The crop of corn was tolerable, being four hundred and eighty-seven barrels. I now got fully into the clover, plaster and fallow system, and will now state the amount of crops, the seasons, the success, and failures, causes, &c. &c. and by way of fair comparison, will begin with 1816, the year I began farming.

Table of crops made upon the three shift rotation.

Year.	Wheat. Bushels.	Corn. Barrels.	
1816	1400	450	The three fields amounting to 650 acres.
1817	1475	80	
1818	1150	670	

Crops made on the rotation of four fields, each one hundred acres, until 1822.)

Year.	Wheat. Bushels.	Corn. Barrels.	Oats. Bushels.	Clover. Tons.
1819	3715	487		a little
1820a	1761	531		mowed
1821b	1668	375	1000	each yr.
1822c	1720	387	1170	50
1823	2458	530	1751	50
1824d	5322	383	1500	25
1825e	2700	464	1000	40

REMARKS.

[a] Wheat nearly destroyed by rust this year: there was enough straw for four thousand bushels.

[b] Wheat again nearly destroyed by rust—very heavy crop of straw. The oats made on forty acres of the corn land the preceding year.

[c] Rust on wheat again—the oats as before, and for the three next years on part of the corn land of the previous years.

[d] Including some inferior grain got from the screenings, the crop of wheat measured 5100 bushels.

[e] Rust again very destructive to the wheat.

Another change was made in 1826, and will continue through the remainder of the table, viz: the corn crops were altogether derived from the reclaimed swamp, then brought into cultivation, (as described in my previous communication,) and oats occupied the whole of the field before used for corn, and thereafter was the only spring crop of the rotation on highland, with a single exception in 1831. I will here remark that having a corn mill on the estate, which yielded enough toll corn to feed the laborers and raise the hogs, and the oats being more than sufficient to feed the horses and other stock, the corn became all (or very nearly all) a sale crop. Besides the crop stated in the table, we generally made enough cotton to

clothe the negroes, and pork to feed them, all of which had been purchased under the former three shift rotation.

Year.	Wheat. Bushels.	Corn. Barrels.	Oats. Bushels.	
1826	4050	445	2500	
1827f	2915	408	6000	
1828g	3100	508	1463	
1829h	3150	833	2255	
1830i	3681	620	2433	
1831j	3860	562	2300	
1832k	5900	509		good crop but used without threshing

REMARKS.

[f] This was the greatest oat year ever known in our country. We threshed and measured only half the shocks, which made three thousand bushels, and the remainder, estimated at the same, was cut up and fed away in the straw.

[g] Ploughed in fifty acres of oats to ameliorate the land, having a large supply of the preceding year's crop on hand still. The effect produced by ploughing in the oats, did not justify the repetition.

[h] Some oats cut up for feeding this year and the next, are not included in the quantity stated for those years.

[i] Limed fifty acres fallowed land with five hundred casks of stone lime—the effect very considerable on the wheat.

[j] Two hundred barrels of this crop of corn were from twenty five acres of the oat field, which is the only exception to the general practice of corn being excluded from the highland.

[k] Three hundred and twenty-five acres in wheat, instead of two hundred as before, by an addition from the land before kept for pasture.

In the fall of 1831, the standing pasture (two hundred and fifty acres) was divided into four equal parts, and one of them added to each of the four fields, so as to increase the size of each to one hundred and sixty-two and a half acres. This year (1833,) I have purchased two hundred acres for a standing pasture, to make my system complete; and the next winter, shall clear twenty-five acres more to add to my cultivated fields, which (with the twenty five acres in lots kept for grazing) will make seven hundred acres for cultivation, and two hundred for pasture, exclusive of the reclaimed land. I now expect to begin to reap the full benefit of my system of cultivation. The first four hundred acres may be considered as permanently improved, and the recent addition from the former pasture is a fair way of improvement, (as it is well taken with clover,) and the whole crops ought now to increase every year.

Since 1825, we have mowed very little clover, as the cultivation and other labors of the reclaimed swamp, have left but little time for hay-making. Consequently, nearly all the clover has been ploughed in to improve the soil.

In addition to the results above stated, I will now give my reasons for thinking the four shift system the best for our James river lands.

In the first place, one of the objects of the Virginia farmer should be to make as much as possible for each hand employed, as labor is much dearer than land in this country, and he cannot make a full profit to the hand without cultivating a tolerably large surface, which the four shift system enables him to do.

Secondly, no farmer can improve his land or keep up its fertility, without a great deal of manure, and that manure cannot be made without a great deal of offal, of which to make it. The four shifts, with the standing pasture, give him more offal than any other system. The standing pasture supports stock enough through the summer, without grazing his clover fields,

to convert his offal into manure during winter; and it is all important in this system not to graze your clover fields which are to be fallowed, so as to have a heavy clover lay to turn under, to restore the land after the three successive grain crops, as well as to make a good crop of wheat the ensuing year.

In the third place, it is my opinion that the more frequently you plough up your land, provided you turn under manure, or a good lay of some kind, (clover is the best,) the faster you improve it; and there is no system in which you can make so much manure, or so often turn under the clover lay as in this.

While on the subject of manures, I will digress a little to mention some few experiments I have made; and will first state that it is of very little consequence (in my opinion) how you use your manure, provided you really *do* use it. The great art is to make it, and that in large quantities. It is like money: any one can spend it, but few can (or rather will) make it, in any quantity.

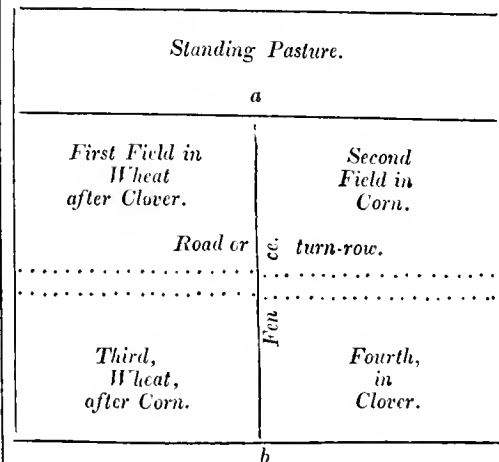
In the spring of 1828, I made the following experiment: My farm-pen manure (which I generally apply by ploughing in with the clover fallow in the fall, just before sowing wheat) was divided into four parts, one of which was hauled out early in April, and ploughed in—a second part was hauled out, and used as a top-dressing on the clover, which was backward, and unpromising—a third was hauled and left in heaps, (each heap a wagon load,) and well covered with earth until the fall, and then ploughed in just before sowing wheat; and the fourth was left in the farm yard, as usual with me, until the fall, and then hauled out, and ploughed in, just before sowing wheat. The top-dressing produced the best wheat—that which was left in the farm yard until the fall the next—and that which was ploughed under in April the worst. But in the crops since that time, there has been no difference visible; and all the pieces of land are very much improved, so that I am of the opinion, stated before, that it is of little consequence how you use manure, so that it is really used—and that it is spread well over the surface which is very important. There is one exception to the above opinion, if it could be practised;—but I have never seen the farmer in our climate in the lower country who could;—I allude to the winter top-dressing of wheat, which is certainly the quickest in its effect, and the most permanent in duration; but we can never use it in that way to any extent in our climate, for several reasons. Our winters are so short, and the ground so rarely hard frozen enough to haul upon, that it is impossible to do much at this kind of work. We are compelled to bed and furrow our land from one end to the other, and if heavy wagons were to run upon it in our wet winters, (and they are always wet,) both the land and wheat would be ruined. But I have not the least doubt, if it could be effected, that it is the very best way of using manure. If done early after sowing the wheat, it improves the wheat very much, and it insures a heavy crop of clover after wheat, for it protects the clover from the spring frosts, and enables you to sow your clover seed early, which is very important on weak land; and then in the summer it protects the young clover from our hot sun and great droughts which we frequently have. I consider a good crop of clover as equal to two manurings, and it is that which makes the top-dressing in winter so durable, because it secures the clover. I top-dress a little, though very little, every winter, as much as we have hard frozen ground to do it on: and I am sure that I can go now and point out every spot that has been done so for the last ten years, so permanent is this way of manuring. There is frequently great waste of manure from applying too much to the acre. The object of a farmer should be to cover a large surface with his manure, just applying enough to make the clover take well, and by plastering his clover he will have the best possible manure in a good clover

lay. My practice is to put twenty-two good wagon loads of stable manure to the acre, and thirty very heavy wagon loads of farm-pen manure to the acre, (as that is very inferior to the stable manure,) and in that manner I get over about fifty acres of land per annum.

I will now return to the reasoning on the four shift system. In the fourth place, our lands are very liable to weeds of every kind, to onions, blue grass, wire grass, partridge pea, and many others, so that they require a spring hoe crop very frequently to keep them clean: the four shift system with corn every fourth year, will do that very effectually.—I have tried the oat crop instead of the corn crop as a cleanser, but it will not answer. The oat crop is an effectual cleanser of onions for the time being, that is to say your crop of wheat for two or three years after the oats will be perfectly free from onions, but they will return after a while if you stop the oat system. But the oats do not in the least prevent the growth of blue grass, wire grass, or partridge pea, and a hoe crop is the only remedy. I shall now be compelled to my sorrow to abandon oats as a cleanser, and substitute the corn crop, so foul has my land become of every thing except the onion, which the oat crop has kept under. I have this year lost one-third of my wheat by blue grass. I consider the oat crop, if a heavy one, fully as exhausting as the corn crop; and I do not regret being obliged to abandon it and take up the corn crop, on that account, but I regret it on account of the onion, of which the corn crop is not half so good a cleanser; and besides, I shall find it too laborious to cultivate one-fourth of my land in corn, in addition to my swamp land; but it must be done—there is no alternative for the blue grass must be checked.

The fifth and last reason in favor of the four shift system, with standing pasture, is, that it requires less fencing than any other. You may have your four fields either under one fence, or divided into two equal divisions, with a fence to each, which is the most convenient, as you may then occasionally graze your fields, when it will be least injurious.* It will be found that the non-grazing system will not do altogether; for after awhile the land becomes too much puffed up, and too full of vegetable matter, to make a good crop of wheat. That may be remedied though, by grazing immediately after hauling off your wheat every year; and provided you take your cattle off whenever the ground is too wet it does not injure the young clover in the least, but rather benefits it; for

* By the following diagram it may be seen, that if the four fields can be laid off by two lines intersecting near the middle of the cultivated land, the half on the left, and that on the right, will alternately be in wheat, and therefore that a single dividing fence, (a, b,) will suffice to permit half the land to be grazed, after it is cleared of the crop of wheat.



clover like wheat, requires the hoof on the land occasionally, or the land becomes too porous and puffed up by the vegetable matter; and besides, the young clover is very much protected by the growth of weeds, which require breaking and trampling down.—You may graze your fields from which you have taken your wheat, until you put your cattle up into winter quarters, with the foregoing precaution in wet weather. But never suffer any thing to run on your clover field the year you expect to fallow it. It is that which I have heretofore spoken of as so objectionable.

I have frequently remarked that a field of clover which was grazed moderately while young (from the time the wheat was taken off until the time to put cattle up into winter quarters,) would take a much earlier start the next spring than one which had not been grazed, owing to the weeds in the latter case, choking up and keeping back the young clover.

The standing pasture may be made of the most inferior land on the farm, which will, in the course of some years, be very much improved by it; or you may convert your woods into a standing pasture by enclosing them, and clearing up the undergrowth, &c.; and frequently on farms, there are swamps, marshes, or strips of land that cannot be cultivated, which make very good standing pastures; so that, in the two last cases, you have all your cleared land to cultivate. One of the strongest proofs of the superiority of the four shift system is, that my friend Selden, of Westover, who has adopted it, now makes double as large crops as his predecessors did, and has put entirely a different face on the land; though he would make good crops under any system, for he is a first rate farmer.

HILL CARTER.

(From the Farmers' Register.)

ACCOUNT OF THE EMBANKMENT AND CULTIVATION OF THE SHIRLEY SWAMP.

MR. EDITOR:

Shirley, June 26, 1833.

Agreeably to your request I have examined my journal, and find the following results from reclaiming eighty-five acres of swamp land at Shirley. The swamp was heavily covered with gum and ash trees, and overflowed twice every day by the tide water at the flood, but left free from water at the ebb tide. The land was reclaimed in the year 1825, by contract, at the expense of \$1.25 per running yard, for the dike, in the following manner. In the first place, a way about fifty feet wide was cleared on the line or route for the dike, and then a ditch about three feet wide, and two feet deep, was dug throughout the course, for the dike to be run upon, to keep it from leaking underneath. The dike was then commenced at low tides, by digging pits in the most convenient places on the outside of the line of the dike, (and only on the outside, and never nearer the dike than twenty feet,) and loading wheelbarrows with the mud from the pits, which were rolled up to the dike on thick planks, and then deposited in a rough shape, until the whole line or course of dike was gone around, so as to give the mud time to settle and dry. The dike being seventeen hundred yards long, sixteen feet at base, four feet at top, and six feet high, it took about five months to go around it the first time, by which time it had settled so much as to require nearly as much mud the second time of going around as the first, to get it to its required size. On going around it the second time, the creeks (three in number) were stopped out as they came to them, by driving down four rows of large piles, or poles pointed at one end, and placed close together, quite across the creeks, so as to keep the mud from washing away as it was thrown in. The base of the dike at the creeks was fifty feet, and the dike made much higher and wider at the top than the other parts, to allow for the greater settling. After all the creeks were stopped, and the dike completed, a trunk, with a floating valve, (Note A.) made of very thick pine plank, was put down at the high-

est side of each creek, about twenty feet from the creek, with a ditch leading to the creek, to let off the water at low tide, but exclude it at high tide. The cost of dike, trunks and all, was \$2167.50. The winter of 1825-26, I cleared fifty acres of the reclaimed land, by cutting down the trees, and burning them in heaps, but did not grub up the stumps. (Note B.) The spring of 1826, I merely listed up (very imperfectly, rows six feet apart, with the grubbing hoes, just wide enough to get earth to cover the corn, but did not pretend to grub up the large stumps or roots, even in this list. From the 12th to the 20th May, I planted the fifty acres in corn on the six feet lists, two feet apart, as near as we could come at it, considering the rough state of the land; and on thinning out the corn, left three stalks in the hill. It produced a very heavy crop of stalks, and a good crop of corn, considering the rough state of the land; the fodder fired before we could gather it all. The crop produced, as by journal, three hundred and eighty barrels of merchantable corn, and sixty-five of short corn fed to hogs. This crop was sold in the spring of 1827, at \$3 per barrel, being \$1140, besides the hog corn and some fodder.

The winter of 1826 and '27, I cleared the balance of reclaimed land, and in the spring of 1827 listed it in the same manner as last year, and planted the whole eighty acres in corn, about the same time in May as last year—and had the promise of a very heavy crop of corn, until the storm of August 26th broke the dike in three places, and overflowed the reclaimed land, and apparently destroyed the crop of corn. I was at the mountains, and my overseer despairing of saving any part of the crop, did not pretend to repair the damages. But as soon as I heard it, I hastened home, and when I arrived, the tide had been flowing in and out for ten or fifteen days, and it required twenty days to repair the damages, which was done with the plantation hands, so that the corn had been subject to the tides for thirty days at least, and I was afraid was ruined; but fortunately the crop was matured before the storm, and all that stood up was saved—and I made about half a crop.

Crop made this year, as per journal—merchantable corn four hundred and eight barrels, and so much unsound corn that we did not pretend to measure it; fed some of the best of it to hogs; balance made manure of. Crop sold for \$2 per barrel—amount \$516.

I now found that the dike had settled, or sunk so much that it would not do to risk another crop of corn upon the reclaimed land, without raising it; and with my plantation hands, I raised the dike one foot higher during the winter of 1827 and '28.

In the spring of 1828, planted in the same way, and about the same time in May as last year, seventy acres of the reclaimed land, in corn, and ten acres of the driest part in cotton. We had a very wet summer throughout, and made a short crop of corn on the reclaimed land, in consequence; and nearly a total failure in cotton. Crop as by journal, made on this land this year, four hundred and fifty-four barrels merchantable corn, fifty-four good short corn fed to hogs, and a great deal of rotten corn. Cotton made, only six hundred and twenty pounds, picked or net cotton. This crop of corn sold for \$2.40 per barrel, making \$1089.60; and cotton was worth, I suppose, ten cents the pound, (though that was used on the plantation,) which, added to the corn, amounted to \$1151.60. The dike now had so much sunk or settled, that we had to raise it again this winter a foot higher all around. The reclaimed land had also sunk a little, and the stumps were disappearing by rotting.

In the year 1829, cultivated reclaimed land as usual in corn, except that we only left two stalks in the hill to try to prevent the fodder from firing, which has

always taken place before we could gather it all, but still it fires too soon for us. Made a very good crop of corn this year, seven hundred and sixty-three barrels merchantable corn; seventy barrels short, but sound, fed to hogs; some twenty or thirty barrels of rotten corn, besides the above—price of corn this year \$1.50 per barrel; value of swamp corn \$1373.40. As I have neglected to mention the mode of cultivation, I will now do it. My reclaimed land is too low and wet to plough, except ten acres on the margin of the highland, so that we have to cultivate all of it except the above ten acres, entirely with hoes, which is done in the following way: The land is laid up every winter in six feet beds, with hoes, and well ditched and water-furrowed from one end to the other, so as to make it as dry as possible. We plant it as soon as possible in the spring, (which is generally, the last of April or first of May,) two feet between every hill on the six feet beds, thinning out to two and three stalks to the hill. We begin to weed the corn broad-cast as soon as any grass or weeds appear. We generally get over it twice before harvest, and then the growth of corn is so rapid that it overshadows the land, and keeps the grass and weeds under, so that the cultivation of this sort of land is much less laborious than any one would suppose from not being able to use the plough, provided you begin to weed as soon as any grass or weeds appear; but if you let them get the start of you, you may bid adieu to your corn, for all the hoes in Virginia would not save it.

In 1830, began to plant corn on reclaimed land on 20th April, and finished on 30th; cultivated as usual; we had a wet season, and bad for swamp land. Crop made this year, by journal, five hundred and fifty barrels of merchantable corn; seventy barrels of short corn fed to hogs, and fifty of rotten corn. I will here remark that this kind of land always has much more short and rotten corn than highland, and never turns out so well as the appearance of the crop, while growing, would induce you to suppose. I have often been told by persons who saw the crop while in the tassel, that it must make eighteen or twenty barrels to the acre, so luxuriant was the growth; but the best crop I ever made, was ten barrels and a half to the acre. But the beauty of this land is, that it will last forever without manure, provided you keep the water off; and if ever it sinks to low water mark, which I believe it will, after a long while, why we can but use the pump as they do in Holland. It has now sunk about eighteen inches. Price of corn in 1830, \$3.70 per barrel, and value of swamp corn \$2035.

In the year 1831, cultivated reclaimed land as usual, except that we planted the corn earlier in April than before—and just as it was all up, on the 27th April, we had a violent N. E. storm, with high tides, which broke over the dike, and swept every thing; corn all destroyed—dike made a wreck of—and I was very near giving it up in despair, and in fact did give orders to break up some high land instead of it, but after awhile thought I would make another trial. Went to work on the dike, and by the 17th May stopped out the water again, and began to plant corn a second time. The corn came up, and stood very well, and I thought we had as good a prospect for a full crop as before the storm; for, by 30th May, we had completed the repairs to the dike, and began to weed the corn, at which time it looked beautiful. The second day after we began to weed, the corn began to disappear, and by the fourth day every plant was gone. The caterpillars, or a worm very like them, (somewhat smaller,) had eaten up every plant in the eighty acres, except a small corner of the reclaimed land, about two acres, where, on the subsiding of the flood, all the trash had floated to the thickness of four feet, and we had to burn it off before we could plant that corner. That part escaped the caterpillars entirely, their eggs being burnt, I suppose. I cannot account for the caterpillars, as we never had them before nor since in our corn, though we have had a few once or twice in our wheat, but not to do much inju-

ry. As I was pretty well tired of planting for one year, I waited until the glut of worms as I thought was over, and two days before harvest, the 14th and 15th June, I made a great push, working night and day, and planted the reclaimed land the third time. But it would not all do: the glut of caterpillars was not over; they were only concealed in the ground—and as soon as the corn came up, they again swept it off the face of the earth. After harvest, I thought it was too late to make corn in our climate, but determined to make the fourth trial, and began to plant on 30th June. The caterpillars had turned into a kind of fly and disappeared, and we made about half a crop. Crop made this year on reclaimed land, as by journal, of merchantable corn, three hundred and ten barrels: fifty-two barrels of short, or hog corn, and thirty barrels of rotten corn, caught by frost. Price of corn this year, \$2.25 per barrel; value of swamp corn \$697.50.

1832, cultivated reclaimed land as usual in corn, and had no rain from June 2d until 24th September, the most unprecedented drought ever known in this climate. The swamp land corn suffered from the drought, yet we made there two-thirds of a crop: four hundred and sixty four barrels merchantable corn; forty-five barrels of short corn fed to hogs, and some rotten corn as usual. Price of corn this year, 5 per barrel; value of swamp corn, \$1908.

Recapitulation of Products and Expense.

Years.	Product.	Sales.	Price per bbl.	When sold.
1826	bbls. 380	\$1140	\$3.00	1827
1827	408 1/2	816	2.00	1828
1828	454	1151 inc. cotton	2.40	1829
1829	763	1373	1.80	1830
1830	550	2035	3.70	1831
1831	310	700	2.25	1832
1832	461	1508	3.25	1833

\$5723

Cost of reclaiming the land, - - - \$2200
Interest for seven years on \$2200. - - - 923

Amount of sales for seven years, - - - 3123

Balance, - - - \$5600

The corn used for hogs, and the fodder, &c. are not included in this statement of products. The labor of cultivation and repairs, (of which no correct estimate can be made,) should be deducted from the foregoing balance of \$5600, to show the clear profit.

I ought here to remark that I have been obliged to add a foot to the height of the dike every year since it was reclaimed, and the year it was so wrecked, I had to add two feet, and yet the dike is now only one foot higher than it was first made—that is to say seven feet, so great is the settling of the dike. The general surface of the land since reclaimed has sunk about eighteen inches.

I have not been as much annoyed by muskrats as I expected; from the circumstance, I suppose, of our constant attention to the dike, and the constant working of the hands during summer, in the crop, and winter on the dike, so that the muskrats are scared off. A man goes all around the dike every day to see whether there are any muskrat holes, and marks them wherever he finds them; and every now and then we select a low tide, and cut them out, and stop them up carefully, which keeps them sufficiently under for all purposes. I think the swamp mud is better for making a dike that is liable to the waves of the river or creek, than highland earth, as it is much more tenacious and less apt to be washed by the waves; and when a muskrat cuts through the swamp mud, it never washes larger. I have known a hole which could not be stopped out, for want of time and low tides, remain the same size for months at a time,—so

* Five acres of the area was at all times lost by being covered, or kept too wet, by the small creeks—so as to leave the whole quantity fit for cultivation, eighty acres only.

soapy and tenacious is our swamp mud, and, but for its settling, it would be the very best material for dikes. When my dike was overflowed, if it had been of highland earth, or sand, it would have been all washed away—but the swamp mud stood it like wax, and only broke in the weaker parts. To future reclaimers of swamp lands I would advise the leaving a very wide margin of land between their dike and the river or creek, to furnish mud to repair and raise these dikes with, as well as to break the waves off; and never to dig a pit or hole, nearer than thirty or forty feet (the farther the better) from the dike, as all pools or holes of water near the dike attract muskrats. Also never allow any earth or mud to be taken from the inside of your dike, as that is ruinous—for if you have any sink on the inside, the water will remain in it frequently, and will attract the muskrats; for wherever there is water, they cut a hole through the dike to communicate with it. The greatest security against them is to have your reclaimed land free from water, on the inside at least—have no ditches near the dike if it can be avoided; but if you are obliged to have ditches, let them run perpendicular to your dike, and not parallel, so as to present the least surface of water, and thus offer as little inducement as possible to the muskrats to cut through the dike. Build the dike of the mud or earth from without, and take it as far off from the dike as possible. With good planks and wheelbarrows, it is almost as easy to take the mud from fifty, sixty, or one hundred feet, as nearer, and you will save by it in the end. The further off you go for your mud the better.

HILL CARTER.

[NOTE A.]

The trunks to let off the rain water, or any water which collects on the reclaimed land, are made in the following manner. For a dike sixteen feet at the base, take two pine planks, twenty-six feet long, fourteen inches wide, and two inches thick at least (three would be better) for the sides of the trunk: then with plank of the same thickness, sawed into lengths of twenty-two inches, nailed on the bottom and top of the side planks, with close joints, make a trunk, leaving one end open and the other closed. Then about four inches from the closed end of the trunk, on the top, cut a hole eighteen inches long, and twelve inches wide, to let the water through. Place a valve or door on the underside of the hole of the trunk, four inches wider and four inches longer than the hole, which will float up to the hole and close it, when the water is higher on the outside than the inside; but when the water is higher on the inside, it will sink by the pressure of the water, and let it off from the reclaimed land. The valve or door is kept from getting out of the trunk by a perpendicular pin, put through the top and bottom of the trunk, and near enough to the hole to make the valve rise just under it, and close it. The valve or door should be made of two pieces of plank pinned together, one on top of the other, with the grain of the wood of each crossing that of the other, to keep the valve from splitting.

The trunk is then placed in a ditch cut through the dike to receive it, about half a foot below low water mark, to keep it always immersed in water, (which keeps it from rotting,) with the valve end on the inside of the dike, and the open end on the outside of the dike.

[NOTE B.]

It is much better, I think, not to grub up and burn the stumps and roots, on first clearing swamp land, except in the first where you plant the corn, for several reasons. In the first place, it reduces the surface very much, which is very desirable should not be done. In the second, the stumps and roots keep a great deal of the ground from putting up in grass and weeds, and save that much labor in weeding; and third, the stumps and roots rot much sooner in swamp than in highland, and you get rid of them soon enough without the endless labor of grubbing them up. They will

all disappear in four or five years, where the land is cultivated every year; and the land will not require bedding sooner than that, as it does not sink much until the stumps and roots decay.

H. C.

HORTICULTURE.

(From the Southern Agriculturist.)

AN ADDRESS

Delivered before the Horticultural Society of Charleston, at the Anniversary meeting, July 10, 1853.

BY REV. J. BACHMAN.

(Continued from page 182.)

The celebrated Spanish fly, (*Cantharis of Geoffroy, and Lytta of Fabricius*), which is so invaluable in the healing art, has often mixed with it in our shops, insects which so strongly resemble it, that the vendors themselves are deceived, and none but the practised eye of the entomologist could discover the deception, and yet some of these insects (and I have seen a considerable mixture in your own shops) belong to a different genus, and are not only useless, but may be injurious.

To guard against the depredation of insects, we must first become acquainted with their genera and habits, and then by a course of scientific and practical experiments, we may be able to destroy them or avert their attacks. The larva, (*Aegeria exitiosa*), that is found at the roots of peach trees has been carefully examined and correctly described by entomologists. Having ascertained that the worms enter the earth at the stem of the tree, about the beginning of August, in this part of the country, a covering of cloth or skin tied round the stem about a foot above the ground—extending three or four inches under the surface, and retained there from the first of July to the middle of September, has been found effectual in protecting our trees against the attacks of this enemy. There are three or four other species of insects that infest the peach itself, one of which only I consider as formidable in its attacks, and must to be dreaded. A course of experiments on the character of these insects, and the best mode of guarding against their depredations is in progress by members of this society. The result, together with careful drawings, it is believed, will be laid before the society, in the course of the present summer.

Another insect which has not yet been satisfactorily described, has, within a few years past, fastened itself upon the stems of our orange and lemon trees; and although it is so minute as to require the aid of good magnifying glasses to examine it, after being disengaged from the covering, which envelops it, yet it is so prolific that it now threatens (unless a remedy is soon discovered) to deprive us of the poor remnant of orange trees which the frost has left. Oily substances are known to destroy these insects, but in its application, the remedy prove worse than the disease; the pores of the trees are closed up, and they perish in the course of a season. The *coccus* and *aphides* which are such pests to the green-house, are better known, and consequently may be more easily guarded against. I have invariably found that the immersion of the branches of plants infested with these insects in what is called by the apothecaries, the "yellow wash," a composition of three drachms of corrosive sublimate, mixed with a quart of lime-water, proves an effectual remedy.

Time will not permit me to dwell more minutely upon many other species of insects which infest our gardens and our orchards: we are every year subject to the ravage of others with which we are now unacquainted; for some of the most noxious insects in every country, are not indigenous, but have been imported. These few hints, I trust, will suffice to show the importance of a knowledge of entomology, in successfully carrying on horticultural pursuits.

But an objection has been urged against this study,

which the lovers of the science are anxious to combat, viz: that it requires us to inflict death upon its objects, and we are, therefore, charged with inhumanity. Cruelty consists in torturing or destroying any living thing from mere wantonness, without any useful object in view. The entomologist is not one of these. His insects are, by processes which science has taught him, killed almost instantaneously. He abominates cruelty as much as those who condemn him, but he differs from them in his ideas of the amount of pain inflicted: he does not agree in the truth of the sentiment expressed by the great poet;

"The poor beetle that we tread upon,
In corporal suff'rance, feels a pang as great
As when a giant dies."

His knowledge and experience convince him that this contains more poetry than truth. It is a well known fact that as we descend in the scale of animated being from the highest intelligence to the worm or polypus, there is a gradual diminution of sensibility. The pain of death must be more excruciating to man than to the animal—since, with the former, suffering is increased by mental reflections and by the dread of death. So also insects must suffer less than brute animals, because they are differently constituted; they are cold-blooded, destitute of the great sympathetic nerve, and breathe through orifices beneath their wings. But time will not permit me to treat this subject at large. Suffice it to say, that whilst the Creator has formed insects as perfect as insects are required to be, yet an examination of their whole internal system must convince us that they possess less sensibility than even the tortoise, who is, notwithstanding, known to walk after his head has been separated from his body. Insects will leave their legs in the land without experiencing any apparent pain. Say, inform us, that a butterfly, whose body had been perforated by an insect pin, flew off with it to the first flower, and extracted its sweets without seeming to have been at all incommoded. Ants will walk when deprived of their heads. Bees will sting after their bodies have been cut in two. The silkworm and other of the lepidopterous family, after being deprived both of legs and wings, will not only deposit their eggs, as if nothing had occurred, but will live their usual period. Now let us inquire, would a human being be as indifferent, and suffer apparently so little—would he take his food and enjoy himself if his legs or his arms were amputated? Impossible! Besides, the period of an insect's life at the time when it is procured for the cabinet of the entomologist, is the last stage of its existence. It has already passed through various forms and several stages of its short life. The butterfly would have perished in a very few days, and the coleopterous insect would not have long survived; and let it be remembered, that the specimens which are treasured in the cabinet of the naturalist, which he values more than gold, and on which he thus confers a kind of immortality, has, probably, been, by being thus collected, preserved from some rapacious bird, or fish, or insect, which would soon have devoured them. More have been destroyed in this manner, in a single day, than have been collected by all the entomologists in the world. But, if those who are so sensitive on these subjects, should still declare that they cannot reconcile themselves to have any pain inflicted, even on the insect, and for scientific purposes, I answer, in the language of the Rev. Mr. Kirby, one of the first naturalists of the age, and I would add, one among the most humane and excellent of men—
"Pray, sir, or madam, I would ask, should your green-house be infested by aphides, or your grapery by the semianimate coccus, would this extreme of tenderness induce you to restrict your gardener from destroying them? Are you willing to deny yourself these unnecessary gratifications, and to resign your favorite flowers and fruit at the call of your fine feelings? Or, will you give up the shrub, which, by their relish, enable you to play a better part with your bread and butter at breakfast? If not, I shall only desire you to

recollect, that for a mere personal indulgence, you cause the death of a greater number of animals, than all the entomologists in the world destroy for the promotion of science."

But whatever objections may be urged against this branch of natural history, as connected with horticulture, none can be made against botany. Here no experiments are necessary that require the infliction of pain. Without a knowledge of systematic and physiological botany, we are unable to understand terms and observations, that must occur in every well written work on horticulture. Botany has become a favorite study among the well-informed of both sexes, in every civilized portion of the world. The attraction of flowers and fruits by their colors, taste, and smell—the delight of rearing a living thing, which grows under our eye, and develops itself from a shapeless mass to one of extreme beauty and loveliness—whose life is free from pain, and whose death seals the promise of its reappearance, will always interest us in favor of this study. And when it can be applied to useful purposes—when it can be made to add to the health and comfort of man—when it makes him better and happier, surely it should find an advocate in every breast.

But it will be urged, that however much true science might aid the cause of horticulture, yet, that most of those who study the sciences have done little more than burden their memories with hard and unmeaning names. Suppose we admit it for the sake of argument, and allow that very few become proficient in the sciences—Is there then nothing gained? Why do men study mathematics, a science so generally recommended? Not certainly to make the bulk of those who attend to these studies either astronomers, or engineers, but simply to exercise and strengthen the intellect—and to give the mind a habit of minute attention and investigation. If the natural sciences did no more than this, the pursuit of them would prove an advantage to man. But infinitely greater benefits may be derived from these studies; they may be applied to many useful purposes in life. They have enabled man to multiply the fruits of the earth—to bring from distant climes, plants and vegetables that will give subsistence to thousands. The introduction of the Irish potato alone into Europe, has been one of the greatest blessings conferred upon that land. The melon, the okra, the tomato, and the artichoke, have all been brought from a distance, and are now cultivated in almost all the temperate, as well as tropical portions of the globe. The peach, the apple, the pear, and the plum, with their infinite varieties, were originally confined to a small spot of earth, and were of very little value, till science and horticulture united in introducing them, and improving their flavor. The pharmacopoeia of medicine is indebted to the botanist and horticulturist, for an immense number of ingredients that are calculated to avert the sufferings, and to prolong the life of man. It was the will of heaven that man should be doomed to suffer pain and sorrow; but that same being, also in mercy, gave us a healing balm in many a vine that clusters in the forest, in many a root, and the bark of many a shrub or tree. These have been discovered by the knowledge and labors of men of science, and now our gardens abound with remedies for many of the countless ills to which we are subject in this life. Some physicians of the present day, have indeed, gone so far as to assert, that the healing art could be successfully carried on, without the use of vegetable medicines; but few, I believe, have carried this theory into practice. I am not aware that any thing has as yet been discovered among the minerals that can be substituted in the room of the Peruvian bark, the rhubarb, and an infinite number of vegetable medicines, with whose names you are sufficiently familiar.

The garden and the orchard are calculated to afford the means of health and instruction, to the man of science, as well as the tenant of the cottage. A garden was the first habitation of man; it has ever since

been a source of his purest pleasures, of his most healthful employments, and often the means of his sustenance. Multiply around the poor man's cottage, the comforts of life, and the means of enjoyment—attach him to his garden and to his fruits, and you will save him from discontent and crime. These flowers of life will endear him to his home, and his native land, and he will become a good citizen, as well as a happy man. To the wealthy, these studies and employments should be equally dear. *Nihil est melius*, says Cicero, *nil uberius, nil homini libero dignius*. (Nothing is more profitable, nothing more suitable for a man of leisure.) Some of these studies by an unaccountable perversion of intellect have been so abused, as to have been dragged into the service of irreligion. It is well then, that the lover of nature, who sees God in all things, who in the mirror of the creation, beholds and adores the reflected glory of the Creator, should study these works, in order to recommend the great truths of religion, as contained in the word of God, and make them subservient to the best interests of mankind!

(To be continued.)

(From the Farmers' Register.)

A NEW MODE OF REARING ASPARAGUS.

MR. EDITOR.

June 17, 1833.

Yours of 31st ultimo was received, and with great pleasure I now comply with your request to furnish you with my plan for making asparagus, which you are at liberty to publish in any form you may think suitable, provided you do not mention my name.

The asparagus seed should be sown from the middle of March to the last of April, in a rich spot, (not too much exposed to the mid-day sun,) one inch deep, and the seed one inch apart; after they come up, to be kept clear of grass and weeds during the summer, by hand weeding; to be dug up the next fall or spring—(I prefer the spring, as the roots do not grow during the winter, if set out in the fall, and are liable to be killed by a severe winter)—and set in beds prepared as follows: dig out the size of the beds nine inches deep—cover the bottom three inches deep with rich marl, (which has been my practice,) though I believe that oyster shells half burned will be as good, as it is intended as a lasting heating manure to protect the roots in winter, and force the vegetable early in the spring: then put three inches deep of coarse stable manure, then three inches of rich earth. This brings the beds on a level with the surface of the earth. Next lay off the beds in rows eighteen by twelve inches apart, and put a single eye or spire in each spot where the lines intersect, and cover them three inches deep with rich earth. Plank the sides of the beds, as this prevents grass and other roots from running into the beds, and also keeps the outside roots from being exposed, by the sides of the beds washing away. The beds should be kept clean by hand weeding, and all the earth and manure used in making them, should be perfectly free from grass roots and noxious weeds. In the fall of the year, after the seeds have matured, cut the tops off close to the beds, (being careful that not a single seed is left to vegetate on the beds,) as they have already as many roots as the space they occupy should contain, and if additional roots are suffered to form from year to year, from the falling of the seed every fall, the beds will be so much clustered with roots that the vegetable must degenerate, at least in size and length, as the new roots form near, or on the surface. Some prevent this by burning, but I think the best way is to pick them off by hand, before the ball that contains the seed breaks. You then top-dress the beds with coarse stable manure, let it lie on all winter, and in the following spring rake off the coarsest part, and fork in the remainder, being careful that the fork does not touch the roots.—Pursue this course two falls, and early in the third

spring, before the beds are forked up, put on two inches of light well rotted manure, fork it in with the stable manure, then put on from three to four inches deep of clean sand from the river shore, and you will cut in the month of April the best vegetables we have in Virginia. I would not give my beds for the balance of my garden. I think there is much in the kind of seed. I have a gallon, and if you will say how they must be conveyed, I will with pleasure send you some. I obtained my seed from New York; they were marked "giant asparagus."

The cover of sand is important on several accounts: its being a great absorber of heat and moisture, so soon as the vegetable gets through the soil, it is hastily thrown through the sand to the surface in a bleached tender state, and the cutting from day to day is more uniformly of the same tender delicious vegetable. The sand also prevents grass from growing on the beds, which obviates the necessity of so much hand weeding during the season for cutting, by which the beds frequently become trampled, and the vegetable, that is about to come through the surface, mashed down, which not only destroys the spires that are so trampled on by the gardener in the process of hand weeding, but (I think) injures the root. The sand should be laid in the alleys between the beds, in the fall, when the beds are about to receive the top-dressing of stable litter to keep them warm through the winter; and when the sand is about to be replaced in the spring, it should be passed through a sieve of such size as will not let the balls (that contain the seed) pass through. This will be another means of preventing the seed from vegetating on the beds. There is a practice very prevalent with gardeners to plant lettuce, radishes, and other early vegetables on the beds; this should never be done, and particularly with radishes, as they have a long root that extends to the roots of the asparagus, and must seriously interfere with them.

I frequently cut asparagus from three to five and a half, and once I cut a spire six inches in circumference, and from five to eight inches long; it could have been cut longer, but it is never tender near the root.

RURAL ECONOMY.

(From the Philadelphia Inquirer.)

DISEASE AMONG CATTLE.

The following is from one of the most respectable farmers of the county of Philadelphia.

MR. EDITOR:

Sir:—A disease,—name unknown to the writer,—is prevalent among the horned cattle and horses in the neighborhood of Frankford, in this county; and my object in publicly stating this fact, is to elicit, if possible, through the medium of your journal, some information touching the disease, its cause, its cure, or what is most desirable, an "ounce of prevention."—Within the last fortnight, or three weeks, upwards of nine cows and six or seven horses have died in the immediate vicinity of the village, and all, so far as I can learn, were carried off in the same way.—The writer of this communication has lost, of a stock of four cows and three horses, two of the former and one of the latter, all having died within ten days.—My cows and horses were apparently in health *three hours previous to death!* and in every instance they were found dead without exhibiting any symptoms of disease. I am told, however, that a horse of one of my neighbors exhibited uneasiness and a kind of vertigo a few hours previous to death, but that no symptoms of disease were visible in the morning—the animal having died in the evening. I had a post mortem examination of one of my cows, but could discover nothing in the stomach, bowels, or paunch, to produce death;—these parts of the animal exhibited a

healthy appearance. The abdomens of the cows and horse were all much swollen after death.

August 1st.

P. S. Cow well, apparently, at 2 P. M. dead at half past 5.

Cow well, apparently, at 10 in the evening; found dead and cold at 5 next morning.

Horse well at 2 o'clock, dead at half past 4.

(From the Philadelphia Inquirer.)

DISEASE OF CATTLE.

Near Holmesburg, Philad. Co.)

Aug. 10, 1853.)

MR. EDITOR:

Dear Sir,—Several years ago, the well known botanist, Mr. Nuttall, pointed out to me, upon my farm, a plant, which usually blossoms about this season of the year, which he referred to as the cause of what is commonly called the "slobbers" in horses, a continual discharge from the salivary glands, which exhausts their strength very rapidly. This plant grows upon old and poor pasture fields, and is known by the name of "The Devil's Tobacco." (*Lobelia inflata*). It is highly fragrant, spicy, and active as an emetic—even dangerously so—and exercises a very powerful and dangerous influence over the animal system. I have seen a pair of horses turned out to pasture at night in the heat of summer, so weak in the morning, with the water running in streams from their mouths, that they could not be used for a week. Salt and dry ground food appear to be the best remedies.

A gentleman who had a farm on the banks of the Schuylkill told me that he sowed a pasture field with two or three bushels of salt to the acre, which corrected this evil, although horses turned into the next field "slobbered," and had previously been so affected in the one sown with salt. Whether this salt acted as a preventive of the nauseating effects, or interrupted the development of the plant, or that its influences were solely through the stomachs of the animals, I am not prepared to explain—but the fact was stated by one upon whom I have full reliance.

When Linnaeus visited Tornea, the inhabitants complained of a distemper which killed multitudes of their cattle, especially during spring, when first turned out into a meadow in the neighborhood. He soon traced the disorder to the water hemlock, which grew plentifully in the place, and which the cattle in the spring did not know how to avoid, having been closely confined during winter.

Dr. Blenheim, in his Philosophy of Zoology, mentions that in Orkney many goslings die when first turned out into the hills to pasture, in consequence of eating the leaves of fox glove.

The sudden death of the cattle, described as taking place recently in Philadelphia and Montgomery counties, appears something like the effect of a violent vegetable poison—and the mystery may be solved by some of the intelligent medical gentlemen who are acquainted with botany.

Peculiar seasons seem to induce the growth of peculiar plants. Almost every year we notice that certain grain or root crops exceed others. This summer it was remarked that cherries and blackberries were unusually abundant. So, the character of the preceding or present season may increase the especial growth of some noxious plants, which are not commonly abundant, or so active in their properties.*

Sometimes the second crop of hay is found to "slobber" horses—but at other seasons it has not this effect—probably because the plants which cause the "slobbers" (for I do not attribute the effects to clover alone)

*There are certain plants which require a peculiar preparation for the germination of their seeds; thus "the soil in which alone the healthful little plant called *Monilia glauca* makes its appearance, is the surface of putrid fruit; while the small animal termed *Vibrio aceti*, requires for its growth vinegar which has been sometimes exposed to the air".—Philosophy of Zoology, l. 25.

do not arrive at maturity before the second crop of grasses are cut.

Whatever may be the mystery in the sudden death of the cattle, it will be found connected with some natural cause, to discover which exertions of a character likely to succeed should be made. The peculiarities of food, drink, or air, are those most likely to affect animals, and it would be well to guard against them by appropriate precautions.

MISCELLANEOUS.

THE MILK SICKNESS.

The Danbury Herald contains a letter dated Vincennes, (Indiana,) July 11, of which the following is an extract:

"At Logansport, on the banks of the Wabash, I was cautioned by an elderly lady against using either milk, butter or beef, on my way to Vincennes. As a reason for her caution, she informed me that the milk sickness was common in this state. I had heard of it before, but knew little of it. She informed me that very many deaths occurred annually by this dreadful malady. There is a difference of opinion as to the cause that produces it: but the general opinion is, that it is occasioned by the yellow oxyd of arsenic, in the low ground and woodland, and particularly near the Wabash river, and that some weed (as yet unknown) imbibes the poison, and when eaten by cattle, causes them to quiver, stagger, and die within a few hours. If cows eat of it the milk is poisoned, or butter that is made from the milk; and is also a sure death to those who use the milk or butter as it is to the animal that eats the weed. Great care is taken to bury such cattle as die with it; for if dogs, &c. eat their flesh, they share the same fate, and it operates upon them as violently and fatally as upon the creature that was first affected with it. The butcher uniformly, in this state, runs the victims for his knife a mile, to heat its blood, and if it has eaten of the weed, it will at once, on stopping, quiver and shake; if it does not, it is considered safe to butcher; and this is the uniform test, even when beef cattle show no signs of having ate the weed. Indiana is not alone in this misfortune: there has been many cases in some parts of Ohio and south of St. Louis, and other of the south-western states. I have seen many farms, with comfortable buildings and improvements, entirely abandoned, and their owners fled to other quarters, to avoid the dreadful curse. And yet I confess I have never seen any section of country superior in soil, to the land adjoining the Wabash, and this is the only objection to it.

Yours, &c."

A REMEDY TO STOP BLOOD.

The efficacy of soot in stopping blood proceeding from a fresh wound, was lately tested and proved beyond a doubt, in the case of Nathan Cornish, near Newark, New Castle county, who while engaged in making fence, by a misstroke of the axe cut his leg badly to the bone, which bled profusely. Not being aware at first, of the extent of the injury he had sustained, he continued at work, till perceiving the blood running very freely, he pulled off his boot and was alarmed at finding it drenched with blood. He immediately started for home, the blood from his leg continued to increase, and after his arrival, proceeded to try various means for stopping it without effect. After trying almost every remedy without success, and despairing of stopping the blood, with the loss of which his strength was fast wasting away—soot was applied, and to the surprise of every one, the bleeding was stopped almost instantly. And what is still more singular the pain which was very severe almost as soon abated, and he is now in a fair way to recover.

[We know that soot is the best thing to stop blood ever used—we have long used it.—*Ed. Am. Far.*]

RECEIPT TO CURE THE KING'S EVIL.

MR. SMITH:

South Quay, June 22, 1833.

Take of hurdock, either tops or roots, and make a strong tea, and drink about a gill, morning, noon and night; take of the seeds of the same plant, beat them fine, and spread them on a tar plaster; the tar should be put on a piece of leather—and cut a hole through the leather, and let the whole come over the sore.

This is to be continued until the cure is effected; it will take several months in some cases to effect a cure.

(From the Norfolk Herald.)

A WAY TO KEEP PISMIRIES FROM SUGAR, &c.

If any person will take one of these troublesome animals, and put it on a piece of wood placed perpendicularly, and draw a *chalk mark* around the insect, he will find that it cannot crawl over the *chalk mark upwards*, owing to its losing its foot-hold. If the above be a fact, as by repeated experiments the subscriber has found it to be, would it not be advisable for house-keepers to place their *sweets* on a table, and make a chalk mark around the legs, or in their closets, on benches, with *chalk marks* around their standards. If you find that the above is worthy of an insertion, please to give it, and oblige a

NORTH CAROLINIAN.

The Boston Transcript relates that a poor adventurer died by scalding and suffocation on Tuesday, in consequence of falling into a kettle of glue and molasses which the pressman in that office was boiling down to cast a new ink roller. All endeavors to find his friends or ascertain his residence proved unavailing. He had on a grey coat and pantaloons, but was without shoes or stockings. His whiskers were long and wiry; his nose sharp and prominent; and his eyes black and piercing; his head was uncommonly large, and the bump of *adventurousness* finely developed. The general characteristics were very like those of a *wharf rat*.

CURIOUS CIRCUMSTANCE.—On the morning of the 19th July, in Steubenville, Ohio, a valuable *marc*, belonging to Mr. Wedderstrand, died after thirty-eight hours of extreme agony. The body was then opened to ascertain the cause of her death, when a "house" snake, between eighteen inches and two feet in length, was found extending along the windpipe with its head penetrated *into the heart*. The above we have from responsible men, who saw the snake taken out. We have liberty to name several of them, and will do so.

Thomas Wedderstrand, owner, Alex. McMurray, Farrier; James Odert, Theodore Wedderstrand, J. McGoire, F. Smith and James Sinneral, dissector.

[*New Lisbon (Ohio) Patriot.*]

FLORIDA.—Doubt can no longer exist that the productions of the West Indies may be profitably cultivated on the Peninsula of Florida. The sloop *Capital* arrived yesterday from near Cape Florida, with a quantity of bananas, plantains and limes, as a part of her cargo, being the first shipment, for commercial purposes, of fruit produced at that place.

A bunch of the bananas, and a bunch of the plantains, may be seen at this office: also a few of the limes. They are all remarkably fine.

[*Charleston Mercury.*]

It is gratifying to learn from some of our farmers, that the crops are not so generally deficient as they were supposed to be.—*Newbern Spectator.*

The standard weight for merchantable wheat this season, has been fixed by the city millers of Richmond, at 58 lbs. the bushel. Last season it was 60, and half the crop weighed 61.—*Whig.*

Prices Current in New York, August 17.

Beeswax, yellow, 15 a 20. *Cotton*, New Orleans, 15 a 17½; Upland, 14 a 17; Alabama, 15 a 17. *Cotton Bagging*, Hemp, yd. 13 a 21½; Flax, 11 a 15. *Flax*, American, 29 a — *Flax seed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a — Canal, 5.76 a 5.68½; Balt. How'd st. 6.00 a 6.25; Rh'd city mills, — a —; country, 5.75 a 6.00; Alexandria, 5.75 a 6.00; Fredericksburg, 5.87½ a —; Petersburg, 5.87½ a —; Rye flour, 3.62½ a 3.75; Indian meal, per bbl. 3.75 a 3.87½; per hhd. 16.50 a 17.00. *Grain*, Wheat, North, 1.12 a 1.16; Vir. 1.24 a 1.28; Rye, North, .75 a .76; Corn, Yel. North, .75 a .76. *Barley*, — a —; Oats, South and North, .38 a .40; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; *Provisions*, Beef, mess, 10.75 a 11.00; prime, 6.25 a 6.37½; cargo, — a —; Pork, mess, bbl. 15.75 a 16.00; prime, 11.75 a 12.00; Lard, 9 a 10½.

SOUTHDOWN RAM.

A full bred Southdown Ram for sale for \$75.00.
Address I. I. HITCHCOCK,
American Farmer Establishment.

TALAVERA WHITE WHEAT.

[See No. 21 of this vol.—August 2d.]
A few bushels of this superior wheat, perfectly clean, for seed, may be had at the American Farmer Establishment, at \$2, if immediately applied for, to
I. I. HITCHCOCK.

ORCHARD GRASS SEED.

I shall receive in a few days, a small quantity of Orchard Grass Seed, of this year's growth, represented by the grower, as very good; price \$3.
I. I. HITCHCOCK,
American Farmer Establishment.

DURHAM AND DEVON CATTLE.

Several bulls and heifers, from one to two years old, the product of a cross between the full blood Durham and Devon breeds, are offered for sale by a respectable breeder, at prices according to quality from \$50 to \$100 each. They are beautiful animals, and the above prices are considered very low for stock so valuable.
Apply to I. I. HITCHCOCK,
American Farmer Establishment.

TIMOTHY AND HERD'S GRASS SEED.

A few bushels of each for sale—Timothy at \$3.50 and Herd's Grass at \$1.—At the American Farmer Establishment, by
I. I. HITCHCOCK.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:
One full blood Bull, twenty months old, sired by Bolivar, out of a first rate imported cow. Price \$200.
One full blood bull, one year old last spring—a very fine animal. Price \$200.
One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.
Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, seventeen months old, from good stock, seven-eighths Durham. Price \$175.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

Address I. I. HITCHCOCK.
Amer. Far. Establishment.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by
I. I. HITCHCOCK,
American Farmer Establishment.

A DEVON BULL.

Six years old, a first rate animal in every respect, for sale low. He is believed to be decidedly the best animal of the kind in Maryland. Price \$200.

Address I. I. HITCHCOCK,
American Farmer Establishment.

WANTED. A BAKEWELL RAM,

One year old or more, for which a fair price will be paid. Inquire of
I. I. HITCHCOCK,
American Farmer Establishment.

TALL MEADOW OAT GRASS SEED.

Just received at the American Farmer Establishment, 100 bushels Tall Meadow Oat Grass Seed, of first quality, just harvested and for sale, at \$2.50 per bushel, by
I. I. HITCHCOCK.

EARLY YORK CABBAGE,

And all other GARDEN SEEDS, suitable for fall sowing, are for sale at the American Farmer Seed Store, by
I. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

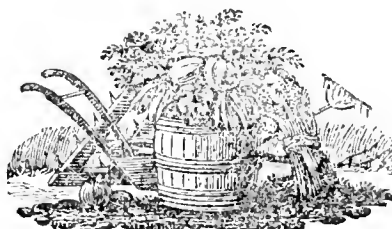
J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.
J. S. EASTMAN.

Aug. 23.

**STRAWBERRY PLANTS.**

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are—large early Scarlet, Pine Apple, Faulkner's Scarlet Pine, Downton, Lima, Wilmot's Superb, Roseberry, English Red Houtbois, Black Musk do. French Alpine, White and Red Monthly, &c. Price \$1.50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.

40 lbs. summer and winter SPINACH.

100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2.50 per lb.

100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year)

Early greys or Scotch KAIL, Brussels SPROUTS, &c.

Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,
Corner Light and Pratt st.

Aug. 23.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET—There is very little variation in prices from last week's quotations. City Mills flour has declined to \$6.00 a 6.12½. Wheat and other grain remain about the same. The wagon price of Howard street flour, continues steadily at \$6.00. The business doing in all the articles of produce, is moderate.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Cigars, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.90 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 361 hds. Md.; 281 hds. Ohio; and 13 hds. Ky.—total 855 hds.

Flour.—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.12½ a 6.25; city mills, 6.00 a 6.12½—city mills extra 6.25 a —;—CORN MEAL bbl 3 62½.—GRAIN, new red wheat, 1.14 a 1.18; white do 1.15 a 1.25.—CORN, white 62 a 63, yellow, 64 a 65;—Rye, 60 a —.—OATS, 28 a 31 —.—BEANS, 75 a 80—PEAS, 65 a 70.—CLOVER-SEED 9.00 a —.—TIMOTHY, 3.50 a 4.00 ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.25 a 2.50.—Herd's, 1.00 a —.—Lucerne a 37½ lb.—BARLEY,—FALSKILL 1.37 a 1.50—COTTON, Va. 14 a 15; Lou. 17 a 18; Alab. 14 a 16; Tenn. 14 a 15; N. Car. 14 a 16; Upland 15 a 17.—Wm-key, hds. 1st p. 30 a; —in bbls. 31 a 32.—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40. Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31—three quarters do. 26 a 28; half do. 25 a 26; quarter do 25 a 26; common, 25 a 26; HEMP, Russia, ton, \$170 a 175; Country, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—Feathers, 37 a 38;—Plaster Paris, per ton, 4.00 a 4.06; ground, 1.50 a —bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial; Prices of Wheat, Combinations among Dealers, &c.—Rock of Dunbar's Crab—The Four Shift System, the best for James River lands, or any good Wheat and Corn Soils, by Hill Carter—Account of the Embankment and Cultivation of the Shirley Swamp, by Hill Carter—An Address delivered before the Horticultural Society at Charleston, at the Anniversary Meeting, July 10, 1833, by Rev. J. Bachman; continued—A New and Successful Mode of Rearing Asparagus—Disease among the Cattle near Philadelphia—Suggestions as to the Cause of the Disease among the Cattle near Philadelphia; Mr Nuttall's opinion of the cause of the "Slobbers" in Horses—Account of a Disease peculiar to some parts of the Southwestern States, called the Milk Sickness—Soot a Remedy to Stop Blood—Receipt to Cure the King's Evil—A way to keep Pismires from Sugar, &c.—Curious Circumstances—Productions of Florida—Wheat Crops—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL**Agricultural and Horticultural Establishment:**

COMPRISING,
A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

—An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, AUGUST 30, 1833.

THE CATALPA.—This tree has recently attracted considerable attention as a valuable timber for posts. As an ornamental tree it has long been well known, but until last year we believe it had scarcely been thought of for any thing else, except in a remote part of the "far west," and we are indebted to Gen. Wm H. Harrison, of Ohio, for bringing it into notice. His remarks will be found in an address before the Hamilton county Agricultural Society, delivered by that gentleman on the 16th June, 1831, and published in the *American Farmer*, vol. 13, pages 162, 169—and in number seventeen of the present volume. As the Catalpa can be readily raised from seed, the season for gathering which is fast approaching, we have thought it advisable to recall attention to the subject. Young trees may also be obtained of any size from all the nurseries in Baltimore.

UNHEALTHINESS OF NEW WHEAT.—The period is near at hand when the industrious and patient husbandman will thrust the sickle into his fields of white and waving grain, in the expectation of realizing the fulfilment of his hopes, and of gathering in a plentiful harvest as a reward for his summer toil. Our farmers are wont to be over anxious too, in cutting down their grain a little earlier, if possible, than their neighbors, and to separate the wheat from the chaff before the process of ripening is complete. A sort of pride and rivalry prevails to see whose soil will yield the earliest as well the biggest crop, and it is probable that a desire to feed upon the flour of new wheat has been the cause of no little injury to health in many families in the country. At least this is the opinion of scientific men who have devoted considerable attention to the subject, and who have presented to the public the results of their investigations.

The Southern Planter contains a communication from Professor Anthony, in which he gives a wholesome caution to farmers that they may be prevented from misusing the bounties of Providence, whereby they are supplied with fine crops of small grain, and thus, instead of preparing them for a safe nutriment, render them a cause of impairment of health, if not of extensive and dangerous diseases. All bread stuffs require a certain length of time after being well ripened and gathered, before they are proper for consumption. It is advised that grain should not be ground sooner than two or three months after it has been gathered into barns.

Although the stalk, on which the seed grows, may be dead, still there is a vitality or principle of life in the grain, which, if unmolested, goes on to mature the grain and prepare it for the valuable purpose for which it was designed. But if its texture be broken down by any process which destroys its vitality, as for instance in grinding, it loses this life—ceases to perfect this nature, and is subjected to a kind of dry putrefaction, by which even worms are produced in it. To prove this, it is stated that innumerable small worms, occupying all parts of the barrel, have been found in flour made of wheat soon after harvest.—Our farmers would do well to direct their attention to this subject.

All vegetable substances must arrive to a certain degree of perfection before they are fit to be used as articles of diet. Potatoes, half grown, soon cloy the stomach. New corn, new fodder and new hay will not only fail to nourish, but, it is said, will actually so disorder horses as to sicken them.

Extensive researches on this subject have been made in relation to cholera and other malignant epidemics, and so satisfactory have these researches been, that it is believed by some medical men that a dyspeptic state of the stomach, consequent on the use

of bread not suited to human digestion and nourishment, is the proximate cause of cholera.

It is well known that a healthy tone of the stomach cannot be preserved but by a proper reception of good and healthy nutriment. This primary organ of digestion may be filled to overflowing, and yet the indigestible qualities of the food taken may be such as to occasion the most serious mischief to the individual.

Dr. Hoggarth, of England, observes that the flour of wheat ground at two early a period after gathering, will neither yield itself properly to the process of panary fermentation, nor afford due nourishment to the system. It is usual, in London, until about Christmas, to mix a considerable quantity of old grain with the new, before sending it to the mill.

"If then grain be used in its too recent state, too great a tax is laid on the reorganization powers of the stomach, and probably of the whole system.—Thus will the stomach and collations viscera become disordered, and the blood unsuited to the proper purposes of growth, nutrition and health. Thus will debility be produced, which will show itself in debility of the digestive function, or in disposing the system to the ready morbid action of such noxious cause as may be present in the system, or may be applied at the time of the existence of this debility. Thus, most probably, cholera is produced in its main epidemic character. Thus was produced those dreadful malignant epidemics which ravaged various parts of Germany, as Silesia, Prignitz, and Lower Saxony, as well as some parts of Sweden, Switzerland and France, between 1770 and 1790; they very exactly simulated cholera. This has been traced out by Dr. H., who has marked the coincidence between the time of harvest in these countries which have been visited by cholera, and the appearance of the disease.

"The cholera, in 1829, made its appearance in Russia, about the month of August, the period of harvest in that country, that of 1830 its appearance in June at Reeth, a town in Ghilan, in Persia, in lat. 37 deg.; at Baku, lat. 40, early in July; in the latter part of the month at Teflis, lat. 43; at Astracan, on 19th July; at Tyariteiza, on the 4th of August; at Saratof, 6th of August; and still further north, at Penza, 17th of August; and at Nisen, lat. 56, at the end of August, &c."—*Portsmouth Journal*.

THE HORTICULTURAL SOCIETY OF LONDON.—On Tuesday, Dr. Henderson, the Vice President, occupied the chair at the periodical meeting of the Horticultural Society, at their great room in Regent street.—The exhibition of shrubs and flowers on this occasion was the most brilliant we have ever witnessed, affording an indubitable proof of the value of this institution, and the advancement of the science of horticulture consequent upon it. There were between fifty and sixty different specimens of flowers and shrubs, from the gardens at Turnham green, now in their prime. Ninety-six varieties of roses were sent in by Mr. Hooker, from the Brenchley Nursery. Some of them most lovely, especially the "Rose of Sharon." Mr. Chandler, a worthy and indefatigable florist, contributed a fine and varied collection of plants. A very extraordinary specimen of the sweet scented China rose, from Mr. Brown, was highly eulogised by the secretary, who eloquently expiated on its prolific character; it grows ten or twelve feet in a year. Some pinks from Mr. Glenny, at Twickenham, were extremely beautiful. There were numerous other specimens of both shrubs and flowers, sent by professional as well as amateur florists, which, in a cursory view, we have not the time to enumerate. We are happy to see the worthy Professor, Dr. Lindley, in his place again, and apparently in excellent health, after his return from Cambridge, where he has been visiting the *savants* at their annual assemblage.—Lord John Russell, the profound antiquary and renowned bibliographer, Sir Thomas Philips, and Sir Simeon Haughton Clarke, were this day elected fellows of the Horticultural Society.

POI-ON FROM NEW HONEY.—A son of nine, and a daughter of six years, and only children of Samuel York, of Farmington, died a few days since in consequence of eating new honey. They lived about thirty-six hours.

It is, perhaps, not generally known, that honey recently gathered by bees at a certain season of the year, from the flowers of some poisonous plants, possesses their deleterious qualities, in a highly concentrated state, when fresh, and may prove fatal, if taken in sufficient quantity. It has been ascertained, that the poisonous effects of some plants, as for instance the Lambkill, so called, depend upon a certain agent, named by chemists, Prussic acid. It is also found that this acid, very soon loses its hurtful properties by decomposition; so that honey containing such an agent at first, would of itself become pure in a short time, being suffered to remain undisturbed. Occurrences of death from this cause, are no doubt, exceedingly rare. Though one such fatal instance, among hundreds who might at other times partake of this delicious substance without injury, ought to prove a sufficient caution to deter from the use of it, at that season of the year, which might create a liability to injurious if not fatal consequences.

From a consideration of the embarrassments and difficulties, which at first presented themselves, in judging correctly of the most probable cause of death in these two cases, in so very sudden and surprising a manner, it is quite reasonable to conjecture, that such instances may have happened oftener, and no satisfactory cause could be assigned for the strangeness of the symptoms and the fatal consequences that followed.—*Kennebec Journal*.

Our farmers who have paid attention to the increase and improvement of their flocks, are likely to reap a rich harvest for such attention this season.—Wool is considerably advanced in price and likely to be high for some time. The demand is great and increasing. The clip of this year has been all bought up in the Eastern and N. York states; and such is the avidity with which it is sought after in our own state, that we are creditably informed no less than *sixteen persons*, all wool buyers, were in Washington (Pa.) recently, on one day.—*The Protector*.

FOREIGN MARKETS.

LONDON MARKETS, July 31.

You will notice in the papers the high prices of the leading articles of merchandise. Cotton at Liverpool maintains the full advance. Sales of the last week 47,046.

Cotton.—The sales of cotton last week were nearly 16,000 bags, prices gradually advanced from 1-8 a 1-2 per lb. and the market getting brisker at every stage of the improvement; transactions would have been still more extensive, but there are no supplies here except Surats, which are now fast disappearing.

LIVERPOOL COTTON MARKET.

Thursday 25.—2000 bags. **Saturday, 27.**—limited demand. Sales 2000 bags. **Monday, 29th.**—Our cotton market has been steady to day, and full prices have been obtained for 2,500 bags, the full extent of this day's sale.

July 26.—The market opened with an animated demand for all descriptions, and a further advance was obtained of 5 8d for American, 3d per lb. for Brazil, and 3d per lb. for Sorat; and although on Wednesday and yesterday the demand was limited, the market this day revived, and closed very firmly at the advance above noted. Speculators have taken 25,000 American, 12,000 Brazil, and 1100 Sorat. Seed oils are not in active demand, particularly linseed, but holders are not disposed to accept lower prices. Oil of turpentine is selling slowly in small parcels at former prices. Hemp, the sales are trifling.

Monday, July 29. There has not been much business done in the cotton market to day—the sales are about 2,500 bags without any change in prices.

AGRICULTURE.

(From the Farmers' Register.)

A WALK THROUGH SHIRLEY FARM.

LEAVES FROM A TRAVELLER'S NOTE BOOK.

November 28, 1832.

One of the early steps taken by Mr. Carter for the improvement of Shirley was the reverse of our general practice of extended cultivation.—From about seven hundred acres, the previous extent of the arable land, he reduced the whole space of highland subject to tillage to four hundred acres, divided into four fields, besides some twenty acres in lots which are mostly kept in grass. The remaining body of three hundred acres, the poorest of the farm, formed a standing pasture, until lately, when it was again brought under cultivation, and subjected to the general rotation of crops.—The purchase and substitution of two hundred acres of poor land for standing pasture, made this change practicable and expedient. A tide swamp of eighty-five acres was also added to the extent for cultivation eight years ago, when it was first dyked and drained. This has been under corn every year since, and by its abundant product of grain, and of furance and litter for manure, permits corn to be excluded altogether from the general rotation, which is as follows:

1st year.—Wheat on clover ley—not mowed previously, and but partially grazed.

2d.—Oats.

3d.—Wheat on oat stubble ploughed in, and clover seed sowed.

4th.—Clover, to be turned in for wheat in autumn, as before.

The ploughing of the clover land is begun in the first moist state of the soil in August, and continued usually until October, before it is completed. The ploughing is as deep as can be done by three good horses to each plough. All the manure is given just before the latest of this deep ploughing, and usually serves for fifty acres, including the summer running cow-pens. This is the only deep ploughing given to prepare for the crop; but shallow ploughing and repeated harrowings are given as required before and after sowing the wheat.

I should suppose that but few soils could resist exhaustion under this severe rotation, even with all the aid here derived from manure and general good management; though Mr. Carter's observation and experience have led him to form a very different opinion. He thinks that even on inferior soils, with proper attention to vegetable manures, three grain crops may be made in each rotation of four years, and yet the land be kept improving in product.

The general soil of Shirley is a dark brown clay loam, deep, and originally very rich, and possesses in a high degree the valuable qualities of the low level tracts on the tide water of James river, which seem to have been originally formed by alluvion. The higher part of the farm is of a different and inferior soil. Mr. C. received the estate greatly impoverished by the usual management of overseers during his minority—and since, has restored it to nearly or quite its former fertility. The soils, naturally the poorest, he supposes are now more productive than at first. Fortunately for the success of his labors, the surface was too level to be much hurt by being washed, (the most effectual means for destroying land,) and yet it is sufficiently undulating to be kept perfectly drained—and great care is used for this purpose. The fields are kept in beds of fifteen feet—and that lately sowed in wheat has every water furrow well and neatly opened and cleaned out by the ploughs, and small shallow ditches (or grips) cut across the beds in every depression of the surface, so as to draw all surface water from the furrows, and discharge it from the field. These grips are opened by ploughs and spades after sowing and covering the wheat, and are so

small as not to obstruct the future tillage. The most productive crop of wheat yet made by Mr. C. (though not the largest) was some years ago, before his present rotation was completely in operation. From 110 acres of wheat on clover ley, and 80 more succeeding oats and corn, he reaped and examined 5322 bushels, or between 27 and 28 of average product to the acre. Of this, the part succeeding clover was of course much the best, and some acres of it probably brought 40 bushels. The wheat after clover in the present rotation is usually double as much as the same land will bring two years after, when succeeding oats. Besides the objection to this rotation of being too exhausting for most lands, I should have supposed that it would keep the soil full of weeds—as there is no cleansing or horse-hoed crop introduced. But this evil does not seem to exist here: for though Mr. C. complains loudly of his annoyance from blue grass, and partridge peas, the appearance of his fields when seen under grain, and the amount of crops reaped and sold, sufficiently prove that these pests must be kept from doing much injury. The deep and effectual ploughing, rapid succession of crops, followed by a heavy smothering crop of clover, must be the means which serve to keep down the growth of weeds.*

Gypsum acts here well on clover, and has been used extensively—but is not continued to be applied to every crop of clover. It is used, however, whenever the young growth is endangered by a dry season. Stone lime (from Maine) to the amount of 500 casks was used a few years ago, in such a mode of application as to be mostly carbonated, or made mild, before acting—and with great benefit to the first crop, wheat, which I saw when nearly ripe; of course the benefit will be permanent. The lime was bought at a price unusually low, (less than 1st the cask,) and the effects so well paid the cost, that like applications would have been made every year since, but for the higher price of stone lime. The scarcity of fuel forbids the burning of oyster shells for manure, as is done so beneficially on some of the estates lower down the river. Mr. C. proposes now, as cheaper than lime in any way, to give calcareous manure to his fields, by bringing marl across the river, from the beds in Prince George county.

The deep ploughing of the clover ley, and the sod not being turned back by a second ploughing, prevents most of the clover seed from coming up; and to avoid any risk of loss by relying on the volunteer growth for a crop, a full allowance of seed is sowed at the proper time in every course of crops. The thicker the clover plants may stand, the more seed will be made to the acre: this was to me a new fact—and is directly opposed to opinions that have been published.

The partridge pea is one of the worst pests on such soils as that of Shirley, and I have found it to increase so much on sandy land after marling, that it seemed that wheat culture would ultimately be rendered altogether unprofitable. These worst evils were experienced after early sowing. Any soil over which this plant has once been spread, is so filled with its hard and almost indestructible seeds, that the most careful tillage will never remove them. Every deep ploughing brings to the surface a new supply of dormant seeds, which will sprout as soon as the first cold weather in October begins, and not before. To keep this growth in check, Mr. C. harrows his clover ley after the deep ploughing, and does not sow the wheat until the weather has been cold enough to sprout most of the plants near the surface. This may be expected to take place from the 15th to the 20th, on land ploughed not less than fifteen days before. Then, a very shallow ploughing, or repeated harrowings, serve

to cover the seed wheat, and at the same time to destroy every plant of partridge pea in their then tender state—and not enough plants will again rise to materially hurt the crop of wheat. Thus the partridge pea makes still later sowing necessary than the Hessian fly. My own practice of ploughing (on corn land) deep and well, and then sowing and harrowing in the seed wheat with as little delay as possible, is no safeguard whatever against this weed—as every seed brought up by the plough, is left to spring up with the wheat. At Curles' Neck, I was shown a piece of excellent land under wheat sowed early last month, and on which partridge pea had sprung in abundance, although in the course of the rotation, three previous successive growths of that plant had been brought up by the plough, sprouted, and then destroyed by tillage. The individual plants of partridge pea are as easily killed by the plough and harrow, as any plant whatever—but the succession of plants is endless.

Mr. C. has usually kept 20 horses, about 100 head of horned cattle, and a sufficient stock of hogs for home consumption. He has also 200 sheep, but not here, they being kept on a poor farm a few miles distant, the cultivation of which has been abandoned. With the stock above named, and the vegetable materials for litter furnished by the crops of grain and hay only, there are naturally manured about fifty acres. Very little hay is made, because not needed for food since the marsh was reclaimed. No leaves are used, because there are none sufficiently accessible and abundant. No roots or succulent crops (to any extent) are used for feeding either lean cattle or bees; it being supposed that an acre of land in corn will produce more aliment, than the same land and labor can bring in roots, beets, or mangel wurzel, &c.

The winter cow-yard is now being prepared with enclosure and sheds to receive the cattle. They have not yet been moved from the summer pens, but will be as soon as the yard is littered. It is made every year in the field on which the manure is to be applied the succeeding autumn. Dry sheds, made of long rived slabs, stretch along the whole north side of the yard, and partly along the adjoining east and west sides. The straw and other food is placed in different parts of the yard, in racks formed of fence-rails crossed over a low horizontal pole; and these racks when full, form additional shelters for the cattle from wind and driving rains. The cattle never leave the pen except to be watered, and that not more than twice a day—and in the coldest weather, only once, which is thought sufficient, if done about 1 o'clock. The stock have never appeared to suffer injury from this long confinement. In the spring, when the necessity for feeding has ceased, and the cattle are moved to the naked summer pens, the manure as it lies in the winter yard is usually about two feet thick, and is left in that compact state until September, being sheltered from the sun by a thick coat of straw. It is carried out and spread just ahead of the ploughs that are turning in the clover ley for wheat. The harrowing that immediately follows the ploughs closes the seams, and less loss is sustained, (as Mr. C. thinks,) or more profit gained from the manure, than could be by other more usual modes of management. The manure is sufficiently, though not completely rotted, without the trouble of moving and heaping it to ferment in the spring; and the fermentation must be slow and gentle, from the compressed state of the mass.

The unusual extent annually manured by Mr. C. and the unquestionable general and great increase of fertility which he has thus produced, are alone sufficient to command much respect for his opinions as to the proper application of manure. Still, others are as certain that there is great loss in not using the manure for a spring crop to precede wheat, as well as from its being left exposed with so broad a surface in the pen through the summer, and in the earth after ploughing under in September. Its being buried be-

* Since these notes were written, I have learned from Mr. C. that I was mistaken in this respect. The increase of blue grass is so great, and its growth is so destructive to the clover crop, and impedes so much the preparation of the land for wheat, that some horse-hoed crop or cleansing tillage, must be adopted.

neath a good furrow-slice, while the temperature of the earth is so high, without excluding air or moisture, must serve (in my opinion) to excite a new fermentation, and cause a great loss of products, as there would be no growing plants to absorb them.

Reclaimed marshes.—The dyked tide swamp of Shirley is so beautiful a piece of the most fertile land, and is kept in such perfect good order, that whenever I have seen it, my first feeling of admiration has almost compelled me for a time to yield all my objections to such improvements; and in enjoying the view of the beauty and fertility thus created by enterprise and industry, to forget my conviction of its transient value, and certain future end. This piece, of eighty-five acres, was covered by the thick growth of ash and gum, which is common on fresh water marshes of an elevation above ordinary tides. It has now been dyked and drained seven years. If I may judge the soil by examinations of my own lands of like appearance, and of the embanked salt marsh of Hog Island, this contains fifty per cent of its weight (when perfectly dried for examination) of vegetable matter, destructible by fire, and consequently by putrefaction, when exposed to the air, and the alternations of wet and dry weather. But this vegetable part of the soil (composed of rotten roots, &c.) which is found at all known depths, is so porous and spongy, and so light when dried, that for it to form one-half of the weight, it must constitute nine tenths of the bulk of the soil. My knowing these facts of the composition of our marsh soils, was enough to convince me that whenever drained and cultivated, they would as certainly rot away, as would a large dung hill if left standing for a number of years. The careful and excellent management of the Shirley swamp, will cause it to present the strongest confirmation of my opinion. Most of the embanked marshes on James river have, from neglect, been returned under the dominion of the tides so soon, that the cause I have mentioned was not permitted to be seen operating alone. In every such case, the final failure of the embankment has been attributed to some extraordinary high tide, or to the cutting through the bank by muskrats, or to the water penetrating under and "blowing up" the flood-gates or trunks. Here, there has been no neglect. Distasters have occurred indeed, of such magnitude and frequency, that there are not many persons who would not have abandoned the improvement in despair. But, whatever damage has been sustained, was speedily repaired—and the land has every successive year yielded a crop of corn, the best of which was more than fifty bushels the acre, and the whole making a general average of thirty-five bushels of sound corn for every year and through every disaster and loss. The level of the land within the dyke appeared to my eye, (and confirmed by Mr. Carter's opinion,) to be already eighteen inches lower than that without, which was still subject to the tides. The bank was originally six feet high. Every winter since it was built, a foot of additional earth has been laid on the bank, which was not enough to counterbalance the loss of the ensuing summer: for after all these additions (which are exclusive of the repairs of extensive breaches made by high tides,) the bank is now lower than at first. But what is most important in the matter, the clear profit from the crops has already greatly overpaid the whole expense of making and preserving the embankment: and therefore the usual loss attending such improvements will be avoided—unless the proprietor should too long endeavor to defend his work from its inevitable end, the water resuming possession of the whole space. Though I am no advocate for the embankment of our tide marshes, (compared with other improvements) yet if such works are undertaken, it is of the utmost importance that they should be well executed; and all who are unable to resist this most besetting temptation of tide-water proprietors, will do well to practice the same liberal expense of labor, the care and watchfulness, and the perseverance through difficulties and disas-

ters, that have concurred to secure the success and profit of the embankment and cultivation of the Shirley swamp.

A GLEANER.

(From the Farmers' Register.)

MANURE FROM CASTOR BEANS.

Dr. T. G. Peachy, of Williamsburg, carries on the manufacture of oil from the castor bean (*Palmachrista*) which is raised for sale on many farms hereabout, and is cultivated still more extensively lower down the country. The "bean pomace," or the solid parts of the beans, remaining after the expression of the oil by a powerful hydraulic press, has been found to be one of the richest of manures. Dr. P. applies only fifty bushels to the acre, which he thinks insures to him twenty bushels of wheat (in good seasons) from the poorest land of his farm, which without the manure, would not bring more than five bushels. Its effects, however, are soon at an end, and are not expected to last longer than on a single crop. But clover sowed on the wheat so manured is found to "stick well," which ought to show those who use this manure how to prolong its short lived effects. Dr. P. applies to his land all the bean-pomace yielded by his press, and would not sell it at twenty-five cents the bushel, as he considers its use worth more. It could formerly be bought at the oil-works at Hampton and Norfolk, at five cents the bushel, then at ten cents, and now not at any price, all being engaged by contracts. Mr. D. Galt (who though a new comer to Williamsburg, and a novice in farming, has already made great improvements and profits on his newly purchased land, by marl and other manures) brings from Norfolk to this place all the bean-pomace which a manufactory of castor oil there yields. It is a pity that those who can obtain this very rich manure do not always use it on marled land, and sow clover afterwards. Even of those who use marl largely and value it highly, there are few who will attend to its quality of fixing putrescent manures—and by that neglect, fail to profit by its most important benefit.

The use of bean manure must necessarily be confined to a small space, on account of the limited supply. But I am induced to believe, that the experience of the introducers of this manure, will prove valuable to the very extensive district in which cotton is cultivated and the seeds used as manure. If cotton seeds were mashed, instead of being fermented for manure, as is usual, they probably would be found richer than the pressed beans. The oil alone must be the sole enriching property of both—and the beans, after being pressed with such an enormous force, cannot retain as much oil as the cotton seed have, before losing any. I have heard the value of cotton seed estimated as high as twenty five cents for manure, and wonderful products are stated to have been obtained by using them "in the hull" for corn. But without denying such effects, it is certain that they are not general—and there seems to be as much due to luck as judgment, when this manure is very productive. If the seeds are used without being fermented, they sprout, and I suppose that their oil is thereby changed to something else more fit for food for the young cotton plants, and is lost as manure for the soil. The plants so produced are weeds to the crop intended to be manured, and as troublesome to destroy, as they are useless if left to remain. To avoid this, the seeds are usually exposed in heaps to the weather, and pass through a violent fermentation, which destroys the power of germination, and leaves the mass a rich manure certainly—but much less so than the oil alone would have been without fermentation. I am ignorant as to what are the chemical changes thus produced—but doubtless they are considerable, and destructive of much value in a mass so rich in oil, and so putrescent. When at Mr. Hankins' farm, I saw preparations to grind cotton seed in a common apple mill, to be used for manure.

A GLEANER.

(From the (Edinburgh) Farmers' Magazine.)

ON MANAGEMENT OF FARM DUNG.

Clydesdale, October 20, 1813.

Sir.—As the indispensable necessity of repeated applications of *dung*,—that is to say, putrescent animal, and vegetable matters, for reinvigorating and preserving the fertility of the earth,—is universally admitted, every means by which the quantity of this important substance may be enlarged, or its efficacy increased, must be a valuable acquisition. You have, therefore, done the public good service, in communicating the thoughts of so diligent and successful an inquirer into the secrets of nature, as the illustrious Sir Humphry Davy, on this subject. By a careful consideration of such scientific principles, and applying them according to circumstances, the attentive husbandman may adjust his own practice—enlarge the quantity, and improve the quality of his farm dung—and thus add to the fertility of the country. If you think the following remarks can tend any thing to that purpose, if you please, you may publish them in your next number.

Sir Humphry begins with vegetable substances, and shows that green succulent plants contain the largest proportion of easily soluble matter. He recommends, therefore, that they be ploughed into the ground while they are still fresh and green, about the time of their flowering. But it must be remembered, that the generality of green plants can be used to greater advantage than that of ploughing them immediately into the ground as manure. Besides, if the plants are to be raised on the ground which they are destined to manure, that ground must either be possessed of a tolerable share of fertility, or the plants must be of a puny growth, and the quantity of manure thus obtained inconsiderable. Hence it is evident, that a great part of the substance of which those plants are composed, must be derived from the soil; and ploughing in the plants is not a great deal more than restoring to it that of which it had been recently robbed.

Dry straw, that is, the stems of plants, dried and hardened in the air, is justly represented as widely differing from tender green plants, being possessed of little easily soluble matter, and much woody fibre. To overcome the resistance to solution, which this substance has acquired, it is commonly submitted to some kind of fermentation; and Sir Humphry expresses his doubts of the propriety of indiscriminately adopting this practice, recommending rather to cut straw small and keep it dry, till it be ploughed into the ground. So long as farmers must keep live stock, and not only supply them with a variety of food, but, for the sake of health and cleanliness, accommodate them with a comfortable bed of litter, it is not probable that there will much straw remain, even of the worst quality, to be used in the manner here recommended. But it may not be improper to take under consideration a prescription so directly opposite to ordinary practice.

Sir Humphry does not here give explicit reasons for prescribing the application of unfermented straw as manure, reserving these till he come to treat of composite manure. He only says, that "though it would produce less effect at first, yet its influence would be much more lasting," which no doubt would be the case. But the farmer expects a prompt return. The soil, indeed, is continually consuming all dead animal and vegetable substances committed to it; and, gradually reducing them to total dissolution, absorbs the dissolved matter, and yields it again for the nourishment of growing plants. But when such substances are dry, they imbibe moisture partially, and the decomposition is languid and slow. If, however, a quantity of straw, steeped for some days in water, till it becomes soft and pliant, be put in the ground, two or three inches under the surface, any plant, growing over, or contiguous to it, will in a short time assume a deep verdure and vigorous growth, and grow for some years with remarkable luxuriance, after the conformation of the straw is annihilated, and no traces of it

left. Hence it would appear, that straw, soaked and supplied in water, would be preferable to dry straw; for though, by the force of fermentation, the component principles of vegetables are disengaged; and such as are capable of taking a gaseous form, are dissipated in air, and lost to the husbandman, before they are committed to the ground; yet they would ferment more freely in the ground, by being first well soaked in water; and Sir Humphry approves of a slight incipient fermentation, for which the presence of water is requisite. As straw alone, however, is seldom used as a manure, any farther consideration of the process of fermentation, and its effects, may be waved till we come to composite manure, which chiefly occupies the attention of the farmer. For the same reason, the judicious remarks of this celebrated author, on manures from animal substances, may be passed.

The dung of horses, cattle, sheep, &c. is itself a composite, consisting of animal matter, mixed with the undigested fibres of their food; and we are informed, that it yields nearly the same products as vegetable substances. This substance is always less or more moist when voided; and it continued so, soon decomposes and disappears in the soil with which it is mixed; but if suddenly dried, will keep in perfect preservation for a very long time, and almost lose its peculiar fetor; it will even long preserve the same appearance, when afterwards buried in the moist earth. The dung of live stock is still more compounded by the straw and offals which have served for their litter; and this mixture forms the dunghill, on which the farmer depends for renovating the fertility of the soil. The management of this substance, in such a manner as to render it most efficient, is therefore of great importance; and on this, we are favored with the opinion of this illustrious philosopher. "A slight incipient fermentation" says he, "is undoubtedly of use in the dunghill;" (and indeed it is unavoidable;) "for by means of it, a disposition is brought on, in the woody fibre, to decay and dissolve, when ploughed into the soil." And again: "To great a degree of fermentation is very prejudicial to the composite manure of the dunghill; it is better that there should be no fermentation at all before the manure is used, than that it should be carried too far." To form a candid judgment of this opinion, it seems proper to take a view of the putrefactive fermentation, in those varieties which circumstances produce.

The three great agents of fermentation—water, a warm temperature, and air, have each their peculiar effect; as their presence is less or more abundant. If fermentable substances are immersed in water, the process goes on very slowly; the parts of the subject are rather separating, than the component principles disengaging; and this is accelerated by heat. When the subject is exposed to the free access of the air, a hot fermentation quickly commences, which is most rapid in a warm temperature, and when there is just moisture enough to keep it alive. Thus circumstanced, farm dung quickly consumes; more than half perhaps of its bulk escapes in vapor and gas; and what remains, by being rendered less soluble, must yield less support to vegetation. Our senses may convince us, that such is the case, if we will take the pains to make use of them, and should overcome the prejudice so generally prevalent, for wasting both the bulk and value of farm dung by fermentation, before it is ploughed into the ground. It is in vain to attempt to check the rapidity of fermentation in dung, thus exposed to the influence of that process, by watering, as Sir Humphry justly observes; for when it is laid up open to the air on all sides, no more water will adhere to it, than serves to hasten its consumption.

Some degree of fermentation will indeed be ever operating in this highly putrescible substance, before it can be carried to the field; but it is more economical to control, than to accelerate it. The component principles might then be preserved almost entire, and turned into the ground in that state. As fermentation

proceeded, a genial heat would be raised in the soil; the volatile principles escaping, would go directly to the support of vegetation; and the more refractory parts would be gradually dissolving, and both yielding food to plants, and mending the construction of the soil. To allay the fermentation, Sir Humphry prescribes covering dung with compact earth, so as to seal it up from the access of the air, having first dried it as much as possible. In this, he is perhaps, not quite correct. Turning it over to be dried, would provoke fermentation; and it would be impossible to make it so dry as to be incapable of fermenting. Besides, as the fermentation is most violent when water is present in a low proportion, the consumption would be rapid, and the residue of little value. But the dunghill, which is daily augmenting, cannot be sealed up. His prescription for its site is more commendable. He directs that it be shaded as much as possible from the rays of the sun, and that it be an excavation, paved in the bottom, from which no water can spontaneously escape. If all the dung litter, and every kind of refuse putrescible matter, about a farm, be successively collected into such a place, blended together, and regularly spread with a level surface over the whole space, the mass can then be duly compressed, to exclude the too free admission of air. Over this, any urine of the live stock, which the litter has not absorbed, chamber ley, and every kind of foul water, should from time to time be sprinkled; and when these are not sufficient, plain water should be added, to keep the surface always quite moist. When farm dung is managed in this manner, all its parts being brought nearly in contact by compression, and the small interstices filled with liquid, the fermentation is restrained, and the manure is suffering very little less, either in bulk or fertilizing quality:—at the same time, it is undergoing a very important preparation. The fibres, soaked in putrid water, though not consumed, are much weakened; the cohesion of the parts is relaxed: the elasticity destroyed; and the mass is fitted to dissolve in the soil, and yield abundant nourishment to growing vegetables, the volatile and most soluble parts not having been previously dissipated by a powerful fermentation. If a quantity of farm-dung be taken out of a wet dungstead, and laid loosely up to the air, it will be cool at first; but heat will soon be generated; it will smoke violently, and emit very pungent effluvia; which may convince any one, that the value of the manure has been preserved by being kept in that situation.

From a dungstead of this description, where all the different matters are blended together, closely compressed, and equally soaked with putrid water, different sorts, to suit different soils or purposes, cannot be taken; but one sort suitable for all soils and crops, will be more valuable than all the possible sorts or varieties. It is believed, that farm dung, managed as above, may be successfully applied to every kind of soil. Soils, indeed, which are dry and friable, and easily disposed to fall into fine mold, sooner operate the decomposition of unfermented dung, than those which are cohesive, and more retentive of water, but such dung, by fermenting in the soil, has a powerful effect in mellowing soils of the latter description. Nor does it appear that such manure can be less proper for turnips. After the parts are become flaccid by compression and long steeping in putrid water, this manure, lying compact, and holding as much water as it can absorb and retain, one would think that turnips would be exposed to as little hazard over it, as over highly fermented dung, and find much more nourishment. But if the turnip husbandman shall persist in dissipating one-half of his manure, in order to get the use of the other, there seems to be no reason why others should follow such a wasteful example.

These crude remarks, which other business has prevented me from putting in a better form, contain the judgment which I and a number of my neighbors have formed relating to the management of farm dung, founded on a pretty long tract of experience;

and we think it our duty, upon your invitation, to submit them to the public. Here it may be added, that we find farm-dung, treated as above, well adapted for compounding with peat-moss, according to Lord Meadowbank's rule, of which we approve, and such of us as have access to that substance, practice. If you please, you may give this a place in your valuable publication.

I am, sir, your humble servant, A. D.

(From the (London) Farmers' Magazine.)

PEAT MOSSES AND SHELL MARL.

Account of the Peat Mosses and Shell Marl, on the estate of Dunnichen, in the county of Forfar.—Extracted from a Manuscript History of Peat Moss, by AND. STEELE, Esq.

The changes that have occurred, and the revolutions that have taken place during ages, and are still in their progress, in the filling up of the valleys of the earth, cannot perhaps be more beautifully displayed to the philosophic eye, than by examining Resteneth peat moss, the property of Geo. Dempster, Esq. in the parish of Forfar. Situated 200 feet above the level of the sea, in a hollow from which the water of a copious spring hath had no clear and sufficient issue, this peat-bog, consisting of about 70 acres, must have been once a lake. Indeed, that is sufficiently obvious, not only from its connection with a very considerable lake, called Resteneth Loch, almost a mile in length, but, especially from a bed of shell marl found beneath the peat, and situated immediately above the solid ground. The bed of marl (of which substance there is also a great quantity found in Resteneth Loch) is in some places 15 feet in thickness, gently diminishing towards the margin of the moss.—Its average thickness is about five feet; but the layer is very irregular. On dissolving a portion of this marl in the muriatic acid, I found it a very pure calcareous matter, containing only about a tenth part of its weight, of peaty and other substances. The shells composing the marl, many of which are quite entire, are of the water snail or cochlea kind.—*Helix Putris*, Lin.

The great value of such a bed of marl ought to be a powerful inducement to every one that possesses any moss grounds to search them carefully, and particularly in their deepest recesses, and even beneath their immediate subsoil, for this important article of manure.

Mr. Dempster, hath sold from the bottom of this moss, marl to the extent of upwards of £12,000 sterling, or at the rate of £1000 per annum, ever since the period it was drained, which is about twelve years ago; and the quantity that remains is yet very great.

The immensity of time that I apprehend it would take to form so vast a collection of such minute shell animals is beyond our conception, if we might be permitted to judge from natural causes and effects.

This valley, when it ceased to be a lake, from circumstances now to us incomprehensible, unless the vast accumulation of shells can be deemed a sufficient cause, seems to have acquired a surface fit for the production of trees: for all the under layers of the moss, next to the marl, are composed of roots, stems and branches of alder, birch, hazel, (with the nuts of this last tree externally entire,) and some oaks of considerable size.

It hath been supposed possible that this collection of trees may have been floated from the higher grounds; but it is not probable that all these trees could be deposited in this manner, as there is no appearance of any rivulet having ever run into the valley. It may rather be presumed that the sediment of water, percolating from the adjacent grounds, may have formed above the marl a soil proper for the growth of trees.

From a wood, the valley must have been transformed into a peat bog or moss, probably by a stagnation of water, which would naturally occasion the destruction of the trees and the growth of aquatic plants, which, in such situations, accumulate and never fall

into a state of total decomposition. The peat matter is found about six feet thick above the marl, and at the time of the drainage its surface was covered over with heath.

By drainage and the consequent alteration of the nature of the soil, the heath has been entirely obliterated, and the moss, even at the surface, formed into a fine light mold, and covered with grass, coarse indeed in general; but where it hath been gravelled for a road, it is not unworthy of notice, that it is swarded at the sides with the finest pasture grasses and clovers; couch grass or twitch (*Friticum repens*) was there also particularly observable.

This moss hath been drained by one deep cut through the middle of it, and through a sand bank of the depth of thirty feet which obstructed the issue of the water. The drainage, however, having been intended for the purpose only of obtaining the marl, no artificial general improvement of the surface of the ground has yet taken place; but by every appearance, when it shall be done, the crops afforded will be uncommonly luxuriant, from the decomposed nature of the moss caused by its being so long in a drained state. Mr. Dempster hath enclosed, levelled and dug over with the spade about six acres of it, which he means to sow with grass seeds next spring, without any corn crop.

Here are observable some holes which had been dug to the bottom of the moss, containing stagnated water, but now almost filled up again, to the level of the general surface, by bog moss or bog (*Sphagnum paus-tre*) not yet solid; a plain example of the quick reproduction of peat matter by the growth of vegetables of the moss of *musc* tribe.

It is also to be remarked, that the peat earth at the bottom of this moss, which appears to have a small mixture of clay, is very solid, and, when cut into peats and dried, makes excellent fuel; and Mr. Dempster observes, that firm peats of this sort, and particularly what is found on some of the highland grounds of Scotland, is very little inferior to coal.—He burns such peats commonly himself, and has sold many hundred pounds worth to his neighbors from this moss. Their ashes also are valuable for manure, and, by slow and confined combustion, may be produced from the peat in considerable quantity.

The moss of Dunnichen, in the parish of the same name, now partly under culture, is situated near four hundred feet above the level of the sea, in a small valley kept wet, like that of Resteneth, by a copious spring of water, and also by surface waters descending in rainy seasons from the higher grounds.

It consisted of fifty-nine acres mostly of peat soil, shallow at the margin, but deepening to fifteen feet towards the middle. The drainage of it, which was accomplished forty years ago, at the expense of £50, was originally intended merely for the purpose of procuring, more easily, peats for fuel, of which the country stood in great need. Beneath the peat soil was found, on cutting a deep level, a layer of sand mixed with a little mud; six feet thick, and immediately under the sand, in some places, beds of marl, mixed, however, considerably with sand.

On the subject of marl as connected with moss, it may not be improper to observe, that though the common practice of searching for marl is by the boring irons used in trying for coal and other hard mineral substances, yet Mr. Dempster, very judiciously advises rather to make use of a long wooden pole for this purpose, with an iron auger fixed to its end. This makes the operation of boring for marl both cheap and easy. A pole of twenty-five feet, he thinks, will, in general, be of sufficient length. If the moss be found to be deeper than this, it is easy to join another pole to the first, or to obtain a new one of a greater length.

Shell marl is found in the bottom of the generality of lakes, and of meadows and mosses, which, have once been lakes, throughout Great Britain and Ireland. It is the remains of myriads of those sorts of small testaceous animals, which commonly inhabit

pools of water, and have lived and died in those situations.

Some of those shells are univalves, (generally *Helix*, animal *Lim.* x, *Lin.*) others are bivalves (generally *Tellina*, animal *Tellus*, *Lin.*) and are frequently very entire when taken up; but after a short exposure to the atmosphere; they crumble into a fine whitish powder which effervesces with acids, and is, in fact, no way different from powdered limestone. It is commonly more pure from foreign and useless ingredients than most limestone. Some moss marl, examined by Dr. Coventry, Professor of Agriculture at Edinburgh, was found to contain 84 per cent. of pure chalk or carbonate of lime, which is more than lime generally possesses, and the refuse of the marl was chiefly peaty substances, which make the refuse of such marl of more use as a manure, than that of limestone, which is generally sand or clay.

Shell marl may be converted into quick-lime by burning. Its solution changes vegetable colors to green, and it possesses all the other properties of quicklime, and, as such, is used for building in many places of England.

De Pages, in his travels, mentions, that the inhabitants of the South Banks of the Mississippi make oyster shells serve all the purposes of limestone.—And lands that receive manure from towns where much shell-fish is used, or that have shells in their soil, naturally, or by being brought to them from a shelly sea shore, stand in no need of lime for their culture, and are not at all benefited by it.

Some naturalists, indeed, believe that all limestones, marbles, and other masses of calcareous substances, are derived from the remains of animals, and consolidated either in consequence of fusion by heat or solution of water; and some of the finest limestones and marbles show, unequivocally, that they are a congeries of shells of the ocean. Beds of these materials are frequently found near the summits of mountains, in which the shells that compose them can be distinctly traced and enumerated by the naturalist.

As a manure, shell marl uncalcined is therefore to be used as lime; but in that state, it is not so minutely divisible, nor so soluble in water, and of course more tardy in its operation; of consequence, however, it remains much longer in the soil than quicklime. On the comparative value of shell marl and lime, Mr. Lammis, in an essay quoted in Maxwell's Husbandry, remarks, "notwithstanding that lime is so very good manure, yet I prefer marl to it; because, lasting five times as long, it is in the end much cheaper, although sometimes it is more chargeable at first than the other." Likewise, it is obvious that the quantity of calcareous matter in a boll of shell marl, is more than double that in a boll of powdered quicklime. The price ought therefore to be more than double.

(From the Newbern Spectator.)

ON THE BOTANICAL CHARACTER OF GAMA GRASS. MR. EDITOR:

Sir,—I had entertained some thoughts of offering, through your columns, a few remarks on the imperfect description which botanists have given of *Tripsacum dactyloides*, when Mr. HERBEMONT's communication, which gives additional interest to the subject, was put into my hands.

It is true, as Mr. Herbemont remarks, that Pursh, in his *Flora of North America*, has suggested the idea that *Tripsacum dactyloides* and *T. monastachyon* are the same, or varieties of the same species; and I shall not be surprised if this, in the end, prove to be true. The facts mentioned by Mr. Herbemont, in his communication, agree precisely with what Dr. Loomis and myself have recently observed of this grass in its native state; for, since my late publication in your paper, we have again found it, tolerably abundant, in one locality near this place. On examining it, some days since, we were struck with the singu-

lar fact of the same plant producing spikes differing from each other both in *form* and *arrangement*, one part of them agreeing with the characters of *T. dactyloides*, and the other with those of *T. monastachyon*! I, at the same time, adverted to the idea suggested by Pursh, and remarked that it was not improbable that the species might be the same.

When I wrote that article, however, I did not think it either necessary or desirable to trouble the agricultural reader with botanical doubts, and nice distinctions, more especially as Nuttall and Elliott, who have both written since Pursh, do not recognise the propriety of his remark, and continue to give them as separate species. Elliott says of *Tripsacum dactyloides*—"Flowers in terminal spikes; spikes three to four, (when four, brachiately opposite?) bearing flowers on one (the interior) side. Fertile florets two to four, at the base of the spike, sitting in the excavations of the jointed, scabrous (?) somewhat triquetrous and flexuous rachis," &c. This description contains some errors, and may be given more correctly thus: "Flowers in terminal spikes; central spikes (those of the stem) aggregate, two to four; bearing the fertile flowers, sometimes alternately on two sides, sometimes on one (the exterior) side. Fertile florets two to ten, at the base of the spike, &c. Spikes terminating the lateral branches solitary, and somewhat cylindrical," (like those of *T. monastachyon*, as noted by Mr. Herbemont.) This last circumstance is not noted by Elliott, nor any other botanist that I know of. These aggregate spikes have the appearance of a *clown cylinder*, and when they are brought together, as Mr. H. observes, they compose a somewhat cylindrical body, resembling the *T. monastachyon*.

Mr. Meares informed me that the grass which he cultivates is the *T. dactyloides*, (having aggregated spikes,) yet it appears from his recent publication that he has the *T. monastachyon* mingled with it, or that the one runs into the other. Mr. M. says, the flowering stems "terminate in one, two, or more spikes." He adds, "when full grown it puts out branches at nearly every joint, which terminate and produce seeds (spikes) like the main stem." Had Mr. M. observed more nicely, he would probably have confirmed the statements of Mr. Herbemont and of myself, that those lateral spikes are *always* solitary, and nearly cylindrical, which certainly countenances the idea that the two species are the same. The greatest difference between them, besides the *aggregation* of the spikes, is, that the aggregated spikes are "somewhat triquetrous" or three sided. Mr. Meares makes a slight error in the following passage:—He says "each seed has a *single tag* of a deep purple color." These are the *styles*, and they are *two* in number to each seed or fertile floret, "plumose and exserted."

Since my late publication another locality of this grass, seven or eight miles above this place, has been ascertained, and as it may be of some use, I will recapitulate all the localities at present known to me.

Mr. Nuttall, in his "Genera," mentions its being found by Z. Collins, Esq., near the banks of the Schuylkill, twenty-five miles above Philadelphia.—He also states its existence in the prairies of the western states. It has been found near Newbern by us; by Mr. R. Foxville, Jr. eight miles above Newbern; by Mr. John Washington, twenty miles west of Newbern; near Wilmington, by Dr. McKee, in Bladen county, on the plantation of Gen. Owen; in Brunswick county, (Mr. Meares,) on Paris Island, South Carolina, and on the Ogeechee river, Geo. by Mr. Elliott; and in Florida by Col. Yonge.

(Since writing the above, I have looked into Eaton's "Manual of Botany," (sixth edition, 1833,) and I find that the author, adopting probably the suggestion of Pursh, has given *Tripsacum monastachyon* as a variety of *T. dactyloides*; and assigns to them a habitat in New York and Connecticut, which is farther north than they had been ascertained to grow when Mr. Nuttall published his *Genera*.)

Your obedient serv't,

H. B. C.

P. S. In my last article I mentioned that *hay* is sometimes made at the south, of the *crab grass*. I ought to have added that the *Digitaria sanguinalis*, as well as the *Eleusine indica*, passes with us under that name. In some places the latter is distinguished as the "crab foot grass." They both make good hay, but the crop is light compared with that of the *gaura* grass. There is one other grass that ought to be brought to the attention of southern planters—the "Bernuda grass," (*Cynodon dactylon*, Nuttall; *Digitaria dactylon*, Elliott.) It grows luxuriantly, says Nuttall, in the sands of the sea coast, as well as the poorest loose soils. Mr. Elliott adds that it is apparently preferred by stock of all descriptions, to every other grass, and suggests that it might be very advantageously used in sandy districts for pasturage and sheep walks.

HORTICULTURE.

(From the Newbern Spectator.)

MEMORANDA OF A JOURNEY FROM NEWBERN TO RALEIGH, N. C.

BY AN AMATEUR BOTANIST.

Hecetudina peregrinante nobilem.—Cicero.

Leaving Newbern on the last of June, the season is not the most propitious for the botanist. The thousand species of vernal flowers have faded away, and the autumnal plants, as the *Aster*, *Leucis solidago*, (Golden rod,) and *Helianthus*, have not yet begun to display their gorgeous hues of nature's great parterre. The *Rhecus* with their luscious flowers however, are now in bloom, among which is pre-eminent the *R. glabella*, which is accompanied by the *R. mariana*, *R. ciliosa*, and the rarer *R. lutea*, or yellow flowered *Rhecia*. That delicate little plant the *Lobelia gracilis* is blooming plentifully, while none of its showy congeners have appeared. It is very singular, considering its abundance, that no botanist before Nuttall, has described this plant. *Calamintha caroliniana*? which is abundant seventeen to twenty four miles from town, beginning to bloom—*Kalmia angustifolia* is in fruit. That elegant tree, with its pyramidal summit, the *Gordonia lasianthus*, is now displaying its beautiful white flowers. In the low grounds of the Neuse the *Clematis reticulata* presents its delicious pale blue flowers, and the *Evolvulus humularis* is spread profusely on the surface of the sandy soil. Here too I found, two years ago, the *Macbridea pulchra*, of Elliott, the first that had been seen in North Carolina. In this part of the journey, I also observed the *Stipa arenacea*, which I had not before noted in this state. In the streets of Kingston, *Martynia prostrata*, and *Sida abutilon*, are abundant. In a ditch six miles above Kingston I observed that singular grass, a native also of the West Indies, the *Schævus effusus*, very appropriately called "saw grass," from the remarkable serrature of the leaves. A little farther on we reach that sandy and barren track which extends to the neighborhood of Waynesborough, and which no traveller perhaps, save the botanist, can enter with satisfaction. To him it has its peculiar interest, for here he finds plants which he would in vain search for in more fertile districts. This is the native region of the *Quercus catesbeii* and the *Iris dichotoma* (Black Jack and wire grass.) But among these I descried with interest the *Stillingia sylvatica*, *Onosmodium hispidum* and *Baptisia lanceolata*, Fl. (*Uniflora*, Nuttall.) In the mill pond of Mrs. McKinney, is a fine locality of that beautiful plant the "white pond lily" (*Nymphaea odorata*). Here too is an abundance of the showy *Cucubia atriplicifolia*, whose flower buds are almost ready to expand, (July 2.) At Mrs. Boon's mill, nine miles below Smithfield, the *stratified rocks* first make their appearance, cropping out on the bank of the creek, up which the road passes. At a farm house a few miles farther on I saw in flower the *Cas-*

sia marylandica (American senna.) I inquired of the inmates of the house whether they understood its properties and use, and found they did.—In the flat pine woods (*Pinus palustris*) near Smithfield, the *Sarcocoea flava* (Trumpets) is abundant, and I observed it, in wet places, west of Smithfield, at the very base of the primitive formations, beyond which I did not see it. I think it probable that this is its western limit. Here too is abundant the most beautiful species of *Dracocephalum* (Dragon's head) that I have seen, (*D. variegatum*?) This plant accompanied us beyond Smithfield, almost to Raleigh. At Smithfield there are some very large and beautiful trees of the *Celtis occidentalis* (Hack berry.) One of them is as large as the largest oak. They occur along the Neuse as low as Waynesborough, and perhaps still lower, though they are not generally large. West of Smithfield the *Silphiums* became plentiful, and were beginning to flower. Between this point and Raleigh occurred the *Comptonia asplenifolia*, a low and odorous shrub, nearly allied to *Myrica gale*. Seven miles east of Raleigh, in a fertile and steady valley, I found the *Suaeda racemosa* in fruit, and *Diocerea quaternata* not in bloom.—*Cucubia atriplicifolia* again becomes abundant, flowering from the 7th to the 15th July. From Wayne to Raleigh, in dry sandy soils, occurred the *Rhus punilum*, (Dwarf sumach,) a very poisonous plant.

During the latter part of the journey the *Schrankia uncinata*, (Sensitive brier,) was frequently observed, climbing the smaller shrubs, and, as I have often does her votaries, crowning them with a thorny wreath of brilliant flowers.

One mile from Raleigh we reach the quarry, from which is obtained the fine granite rock, with which the state is about to rebuild its capital. Should the work be faithfully executed, of this noble material, the capital of N. C. may vie in durability with the Parthenon of Athens, and the Pantheon of Rome.

A rail-way has been constructed from the quarry to the capital square, on which the blocks of granite are transported at less cost, and with much more convenience, than in the ordinary way. It was gratifying to the writer of this sketch thus to see carried into effect the suggestions which he had advanced, in the Newbern Spectator, immediately after the destruction of the former capitol. He then said, "let the capitol be rebuilt, not of brick, but of that elegant granite from the public quarry, and let a temporary rail way be made to carry the rock from the quarry to the building." He added, "and let Thorvaldsen be engaged to restore Canova's statue of Washington, and thus, in one work, might be combined the fame of the two greatest sculptures of modern times." I much fear that this latter suggestion will not be so fortunate as the others have been. H. B. C.

RURAL ECONOMY.

(From the Southern Banner.)

MANUFACTURE OF COTTON SEED OIL.

MESSRS. EDITORS: Athens, July 30, 1835.

As this is the age of improvement and all appear anxious to husband the resources of the country and to develop new ones, permit me, through your paper, to attempt to turn the attention of the public to one, which the south possesses in an eminent degree, and which has been suffered to remain unimproved, for the want of but a very moderate share of enterprise. I allude to the manufacture of cotton seed oil. I propose to shew, first, its entire practicability and then its extensive usefulness, from which the inference will be readily drawn, of the great source of profit necessarily resulting to the cotton planting states. The difficulty heretofore, was the want of a machine to separate the kernels from the lint and hulls which absorbed the oil and prevented its complete extraction from the former. This has been entirely obviated by a machine, invented by our ingeni-

ous fellow citizen, Lancelo Johnson, Esq. of Madison, Morgan county. It is as perfect for the purpose as it is possible, and it is altogether different from any thing of the kind heretofore invented. There is one in Virginia of another description, but in point of expedition and faithful execution, it is nothing to compare with Mr. Johnson's. That plan is a rough heavy stone cylinder turning within a semi-concave circle, brought so near together as to crack the seed and then they are sifted, and the hulls blown away by a fan.—This plan is imperfect, because the hulls and lint are mashed into the kernels, occasionally. Mr. Johnson's is altogether different and is upon the plan of an inverted cob or coffee mill. The hopper is circular and conical, and lined with steel plate teeth, chisel edged, and spirally arranged from top to bottom. Within the hopper, which stands upon a square frame, and conforming to its shape, there revolves a vertical block around which are also inserted similar and corresponding teeth to those mentioned. The rows of teeth are then brought, by means of a regulator, just near enough together to cut the hulls of the seed as they pass through, and are there separated by an inclined rocking riddle and fan, perhaps not unlike a wheat fan. The operation is very perfect. Not a fibre is mixed with the kernel, and they drop as clear as cleaned rice and not unlike it, having about as many kernels cut in two, as the broken grains usually appearing in that article. It hulls twenty bushels an hour with a one horse power, and can be operated by a common rope band attached to the gearing of a cotton gin. It will cost about as much, as an ordinary threshing machine. The press for expressing the oil, is the most expensive part of this business, and will cost \$750. Now, with such an establishment it is already ascertained that there is nothing easier than making the oil, and this brings me to the mention of its usefulness, premising that the facts submitted, are supported by either actual experiment or testimony of the most unimpeachable character.

One bushel of seed will make half a gallon of oil, and this oil sells in the cities of Philadelphia and New York, for one dollar a gallon, when linseed oil is selling for ninety cents. The reason for this difference is owing to the greater number of uses to which it can be applied. In the first place, it is a decidedly better painting oil, and so pronounced by all who have tried it, particularly that distinguished, practical citizen, Gen. David R. Williams, of South Carolina. It is a most excellent lamp oil, and is in its use free from smoke or smell. It answers in the manufacture of woollens equal to any oil ever tried, and for greasing machinery nothing can exceed it.—There are several minor uses to which it can be applied with singular advantage. It has a remarkable property, combined with rotten stone, in cleansing with unrivalled brightness, all kinds of metals and also tortoise shell. When fresh it can be used in corn bread for the same purpose, and to as good an effect as lard, having nothing offensive in smell or taste, the latter resembling that of the hickory nut. The cake as it is called, that part which is left after expressing the oil, is superior, as food for cattle and hogs, to the linseed cake which always commands a dollar a hundred, and is known to fatten the finest heaves brought to the New York market. A bushel yields twelve and a half pounds and is consequently worth twelve and a half cents after the oil is extracted.

It remains to shew the immense advantage which is in store for this country, from this at present unimproved resource. The cotton crop of Georgia, for instance, is 250,000 bales, which at the usual price obtained, is equal to 6,000,000 dollars.—In the seed, this crop weighs three hundred millions, and takes about 600,000 acres to produce it. The fibres when taken off, being one-fourth of the weight, leaves two hundred and twenty-five millions of pounds of seed, which at thirty weight to the bushel, leaves in bushels, 7,500,000. From this quantity subtract one million and a half, necessary to plant 600,000 acres, and

there will then be a balance of six millions, equal to three millions of gallons of oil or three millions of dollars, half the value of the cotton crop—one which is such a vast source of wealth to the people of Georgia. This is exclusive too of the cake, worth seven hundred and fifty thousand dollars more. In making these statements I am not unaware that I run the risk of being considered visionary, but I have the consolation of recollecting that such an idea was ascribed to a certain manufacturing establishment, not far from this place; but who considers it now as a wild project? There is not one planter in twenty who has any idea of the quantity of seed he makes. For every thousand weight of seed cotton, there are twenty-five bushels of seed, which are worth to him in oil and food, at least fifteen dollars, considerably over half the value of his cotton, and really worth more than an equal quantity of corn. The time will come when a man will just as soon think of throwing away his corn as his cotton seed.

It is contemplated to establish an oil press at this place, in connection with the company owning the Athens factory. I give it as my opinion, no investment can be more profitable—it will be better than cotton spinning; because of the cheapness and abundance of the raw material, the great use and value of its production, the smallness of the capital necessary to be invested, its freedom from risk and the unusually moderate portion of manual labor used in its manufacture. If individuals engaged in procuring whale oil are compelled to make large expenditures in purchasing and equipping vessels, in preparing an expensive outfit for a dangerous and distant voyage of ten thousand miles, where they are cruising sometimes for three years, and then are able to realize an immense profit, (making princely fortunes,) at from 70 to 90 cents a gallon for their oil, what may not be expected from the production of a more useful oil, under facilities so obviously superior? Whale oil will be diminished in value, and we shall realize another great advantage in the retrenchment of our expenses for that article, and keeping our money at home. In conclusion, I ought not to forget the immense benefit our rail road will derive from this new pursuit.

A. S. CRAYTON.

P. S.—I have specimens of the oil and cake in my possession, and know that it is an excellent lamp oil. Its effect in cleansing metals and the tortoise shell I have witnessed.

(From the Farmers' Register.)

PEDIGREES OF THE DURHAM BULL PATRICIAN, DURHAM COW SACCHARISSA, AND HEREFORDSHIRE BULL YOUNG TROJAN.

Imported by CORBIN WARWICK, Esq. of Richmond.

[It affords us much gratification to publish the account of this importation of fine cattle, and to present the following testimonials of their value, founded on their descent from stock possessing qualities of the highest grade. It is fortunate for the country, when the expenditure of its wealthy citizens take directions of this kind. Even if the individual sustain loss, (as unfortunately has happened to most of the experimenters who have labored successfully for the benefit of mankind,) at least the public welfare is essentially promoted. But we hope that in the present case, the public spirited effort made to improve our breed of cattle, will prove as profitable to Mr. Warwick, as we believe it will be to the country at large.—*Ed. Far. Reg.*]

Yearling, short horned Durham bull, PATRICIAN, got by Martin, dam by Wharfedale, grand dam Prima by Mentor, g. g. dam Pretty Lass by Harold, g. g. g. dam Pretty Maid by Charge's Duke, g. g. g. d. by Charge's grey bull, &c. &c. in a direct line to the Studley bull.

* Martin by Belzoni, † dam Rosanne by North Star; Surprise by Major—Red Rose by Yarborough—the American cow (sister to R. Collins' Red Rose,) by Fa-

vorite—Punch—Poljambe—Hubback—James Brown's old red bull.

† Belzoni, by North Star, dam Cleopatra by Lancaster, (sold in R. Collins' sale for £600) g. d. by George—Favorite (Connet's sire)—Punch.

Yearling short horned Durham heifer, SACCHARISSA, got by Martin, dam Seraphina by Wharfedale, g. d. by Palemon, g. g. d. Prodigy by Meteor, g. g. g. d. Princess by Western Comet, g. g. g. g. d. Selma (sold in C. Collins' sale for £200) by Favorite, g. g. g. g. d. Countess (sold at same time for £100) by Cupid, g. g. g. g. g. d. Lady (sold at the same time, 11 years old, for £200) by grandson of Boling broke, g. g. g. g. g. g. d. Phoenix, the grand dam of Connet, sold in Collins' sale for 1000 guineas.

P. S. The heifer is in calf by Maggot. Maggot was got by Martin, dam Mux, (winner of the 16 guineas sweepstakes for yearlings at Tredegar,) Mux by Wharfedale, g. d. Unima, by Nestor, g. g. d. Minerva, (winner of the premium at Worcester for best heifer in milk,) g. g. g. d. Mary, by Meteor, g. g. g. d. Magdalena (bred by C. Collins, and a 11 quart cow) by Comet, g. g. g. g. d. by Cupid.

The foregoing are correct pedigrees of the cattle above named; and will be found on reference to Coates' Herd Book and Supplement.

[Signed.] HENRY BERRY,

Great Disham, near Chipstead, Monmouthshire.

Yearling Herefordshire bull, *Young Trojan*, got by a son of the celebrated bull Stockton, that was bred by Mr. Weyman, late of Moreton court, who challenged to show him against any Hereford bull in England; his dam by a bull bred by Mr. Yarworth, late of Brimsport court,—which bull was by Old Trojan, out of his favorite cow Old Carley, a pure bred Tully cow.

[Signed.] JNO. TURNER,
near Leominster.

(From the Kinderhook (Col.) Sentinel.)

HORSE RAKE.

In my last communication I spoke incidentally of the usefulness of the horse rake, as an instrument well adapted to the purpose of gleaming wheat fields. What I have farther to say of this instrument, is to enlarge upon the use for which it was specially constructed—that is, for the raking of hay; it being a substitute for the hand rake. Although the horse rake has been in partial use here for four or five years, and is extremely well adapted to the purpose for which it was intended, I have often been surprised that it is still so little used by farmers. I can only impute this to the want of knowledge of the excellent manner in which it performs its functions, and to the slow process by which information upon every important branch of agriculture becomes disseminated. There is no way of doing this so speedily as through the newspapers, and many a useful instrument is neglected, because farmers do not publicly communicate what might be extremely useful to their own profession. I venture to say to those who do not know the uses of the horse rake, that, if through this paper they only obtain the information that there is such an instrument, and are thus induced to purchase it—if that is the only benefit they obtain for one year's subscription to it, they are amply repaid for the outlay, both for the rake and the paper. I speak of the patent revolving hay rake. The mode of using it, is to attach a horse to it, and the rake following, collects the hay the length of the instrument, which is about ten feet. The horse does not stop to unload or disengage it from the hay, but it makes a half evolution and passes over the hay thus gathered. It will collect it in a much quicker manner than the hand rake, and do the work quite as well. Whenever my hay is fit to house, I start the rake immediately before the hay carts, and one man and horse will gather it much faster than two carts and five or six men can convey it from the field, even if the barn is in the centre of it. To say that it is worth as much as the labor of one man, which is equal to a dollar a day, is not giving it credit enough;

it does more than this. For besides what it saves in the mere labor by enabling you to gather your hay in a short time, you may by despatch in some measures avoid showers, and have the benefit of a long day of sunshine. For large farmers who have clean fields, it is particularly useful, and those who have not yet obtained a rake cannot do better than purchase one at once, as now is the season for using it, and in the labor and time saved, they will be amply and immediately rewarded.

Farmers, upon subjects of agricultural improvement, are slow of belief; and perhaps this is right, as it prevents imposition. But at the same time we must not permit ourselves to be positive losers, because we do not *choose to believe* in modern improvement. If we are at all attentive to what passes around us, we must be satisfied that it is so, and our observation will tell us there is room for yet a great deal more. We have only to look back and see what improvements have been made in agricultural instruments within the last thirty years. For instance, in harvesting: the instrument first used was the sickle, then a ditch instrument called the *sight*—then the half cradle—and lastly the cradle. See what improvement in the construction of ploughs, to lessen the draft, whilst they perform the work more perfectly. In wagons, single and double, for it is not many years since the *wood-shed* sleigh was used here to bring in the harvest—I have seen this in my time, and I do not look very far back. The first wagons made were shod with wood, instead of iron. The Turks still use a very rude plough; it being nothing more than the part of a body of a tree shaped like a plough, with a limb left behind for a handle, and a cow and an ass yoked for drawing it, and a woman commonly attends as a driver. This we would call primitive farming. It is so. With them farming has not advanced in the lapse of years. They are not susceptible to improvements, as they are wedded to old customs, and think God would be angry were they to farm better than their ancestors. I am sorry to say a few about us have some such notion. Let us cast them aside—march up to the intelligence of the age, and throw mind as well as body into active employment. We were not made like the ox and the horse, merely for bodily labor. Let the head assist the hands, and our employment will be both more pleasant and profitable.

FINE CATTLE.

Mr. Alpheus Morse, from Madison county, N. Y. arrived in Westchester, Pa. on the 14th inst. with upwards of 360 head of cattle, selected expressly for this market. Among them were fifty to sixty two year old heifers, taken from the best dairies, which are in demand and will sell readily, at fair prices. Of the working oxen, of which the bulk of the drove is composed, some were very large—of just proportion—and well broke; and so highly pleased were many of the purchasers at last year's sales, that increased prices have now been given.—Two pair of this description were sold at \$175 per pair; two at \$140, and many at intermediate prices, down to \$60 according to size and tractability.

[*Village Recorder.*]

We have been shown two ears of very fine spring wheat, taken from a lot of Major Graham, of Stuyvesant. They contained 163 fine, large and plump grains. Major Graham we learn has made an experiment with one acre only; he sowed his seed in March, and if the few ears we have seen are a fair specimen, (and they are said to be,) then he has succeeded well and will probably reap a better crop than ever was reaped in this county.—*Somerset Herald.*

A trader in bees, during the last month, carried safely several boxes of hives from Kennebeck, in Maine, to Quebec. He travelled during the night, and set his bees out during the day to feed and continue their work, which they did with their usual activity and regularity.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood bull, one year old last spring—a very fine animal. Price \$200.

One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, seventeen months old from good stock, seven-eighths Durham. Price \$175.

One do. twelve months old, a fine Bolivar Calf, seven-eighths Durham. Price \$150.

One do. fifteen months old, three-fourths Durham, has all the appearance of a thoroughbred animal. Price \$150.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

Address

I. I. HITCHCOCK.
Amer. Far. Establishment.

POINTER DOGS.

Two full blood Pointer Puppies, ready for delivery, for sale at \$10 each, by
I. I. HITCHCOCK,
Aug. 30. Amer. Farmer Establishment.

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or overbearing Alpine Strawberry, without runners, BOTH RED AND WHITE, may be had at the American Farmer Establishment.—
Price \$1 per dozen. I. I. HITCHCOCK.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The New Pine, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2 00 per hundred.

EARLY SCARLET, LATE BOURBON PINE, and LARGE EARLY SCARLET, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, Downtown, Grove End Scarlet, Bath Scarlet, Duke of Kent's Scarlet, Raspberry Hautbois, New Black Musk Hautbois, Wilnot Superb, Keene's Imperial, Keene's Large Scarlet, 50 cts. per dozen.

MELON, MITHVEN CASTLE, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

I. I. HITCHCOCK,
American Farmer Establishment.

RHUBARB PLANTS.

I have also for sale RHUBARB PLANTS, for tarts.—
Price, for year old plants, 12½ cents each—for two year old or upwards, 25 cents each.

Also, SEAKALE PLANTS, 25 cents each.

DEVON CATTLE.

For sale, the following fine animals, all of the pure North Devon Blood.

Bull Othello, four years old in May last, Price \$150.

Cows, Rosebud and Volante, each three years old, Price, of each, \$100.

Heifers, Daphne, Sylph and Celeste, two years old last spring, and in calf by Othello, Price, of each, \$75.

Bull calf, Dash, one month old, Price \$50.

If several of these are taken together, some deduction will be made in their prices. They are all excellent animals. Enquire of I. I. HITCHCOCK,

American Farmer Establishment.

DURHAM SHORTHORN BULL.

For sale the improved Durham Shorthorn Bull *Horatio*.

Horatio was calved May 10, 1831. Sired by the celebrated *Bolivar*, out of the imported cow *Romp*, both purchased from Mr. Powell, at high prices. A full pedigree will be furnished to the purchaser. Price \$250.

Inquire of

I. I. HITCHCOCK.

TALAVERA WHITE WHEAT.

[See No. 21 of this vol.—August 2d.]

A few bushels of this superior wheat, perfectly clean, for seed, may be had at the American Farmer Establishment, at \$2, if immediately applied for, to

I. I. HITCHCOCK.

ORCHARD GRASS SEED.

I shall receive in a few days, a small quantity of Orchard Grass Seed, of this year's growth, represented by the grower, as very good; price \$3.

I. I. HITCHCOCK,

American Farmer Establishment.

EARLY YORK CABBAGE,

And all other GARDEN SEEDS, suitable for fall sowing, are for sale at the American Farmer Seed Store, by

I. I. HITCHCOCK.

TIMOTHY AND HERD'S GRASS SEED.

A few bushels of each for sale—Timothy at \$3.50 and Herd's Grass at \$1.—At the American Farmer Establishment, by

I. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borden's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

Aug. 23.

STRAWBERRY PLANTS.

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are:—large early Scarlet, Fine Apple, Faulkner's Scarlet Pine, Dawnton, Lima, Wilnot's Superb, Roseberry, English Red Hautbois, Black Musk do. French Alpine, White and Red Monthly, &c. Price \$1 50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.

40 lbs. summer and winter SPINACH.

100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2 50 per lb.

100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year)

Early greys or Scotch KAIL, Brussels SPROUTS, &c. &c.

Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,
Corner Light and Pratt st.

Aug. 23.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—The variations in flour and grain are very trifling—indeed scarcely any change has occurred. The wagon price of Howard street flour remains at \$6.00, but it is scarcely able to maintain that elevation. The advance in the price of cotton is maintained so far, but its long continuance is considered doubtful.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop. common, 3.00 a 5.00; brown and red 1.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.90 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —. Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 665 bbls. Md.; 203 bbls. Ohio.—total 868 bbls.

Flour.—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.1¼ a —; city mills, 6.90 a —; city mills extra 6.25 a —;—CORN MEAL bbl 3 63¼;—GRAIN, new red wheat, 1.14 a 1.18; white do 1.15 a 1.23;—CORN, white 62 a 63, yellow, 63 a 64;—Rye, 60 a —;—OATS, 28 a 31—BRANS, 75 a 80—PEAS, 65 a 70—CLOVER-SEED 9.00 a ——TIMOTHY 3.50 a 4.00 Orchard Grass 3.00 a ——Tall Meadow Oat Grass 2.25 a 2.50—Herd's, 1.60 a ——Lucerne — a 37½ lb.—BARLEY, FLAXSEED 1.37 a 1.50—COTTON, Va. 14 a 15; Lou. 17 a 18; Ala. 14 a 16; Tenn. 14 a 15; N. Car. 14 a 16; Upland 15 a 17—WHISKY, bbls. 1st 1.30 a;—in bbls. 31 a 32—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40. Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do. 25 a 26; common, 25 a 26; HEMP, Russia, ton, \$170 a 175 Country dew-rotted, 6 a 7c lb. water-rotted 7 a 8c —Feathers, 37 a 38;—Plaster Paris, per ton, 4.00 a 4.06; ground 1.50 a —bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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GENERAL

Agricultural and Horticultural Establishment;
COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

✂ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

✂ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, SEPT. 6, 1833.

The Maine Farmer says, that the state of Maine does not produce bread enough for her children to eat; nor pork enough for her children to eat; nor cheese enough for her children to eat; nor beef enough for her children to eat; nor manufacture cloth enough for her children to wear. But, that lumber is her meat, drink and clothing. A sorry prospect for an agricultural paper, we think!

The paper above alluded to states the above facts by way of reproach, for the people's neglecting agriculture, and it would seem with some justice. But, after all, mankind will take the nearest and easiest, present route to the greatest source of money, say what you will to them about the interests of posterity. If the people of Maine think they can make ten dollars in selling lumber in the same time, and with the same labor that they can make *nine* by ploughing and planting, depend upon it, that the distant interests of posterity, however often suggested to them, will hardly be able to make them change their objects of attention; for human nature will be human nature still, say what you will about it.

§ The Pennsylvania Horticultural Society have sent us the following circular, and we think we shall further their object most by publishing it, and requesting each of our readers to consider it as addressed to him.

Philadelphia, August 26, 1833.

Sir,—The PENNSYLVANIA HORTICULTURAL SOCIETY will hold its Fifth Annual Exhibition at the *Masonic Hall*, Chestnut street, on *Wednesday and Thursday*, the 11th and 12th of September.

The purposes of the society are known to you to be purely patriotic, its sole objects being to advance the public good, by improving the practice and productions of HORTICULTURE.

The committee charged with the preparatory arrangements for the Exhibition, solicit your contributions; and should you be unable, personally to furnish any thing towards the contemplated display, you may perhaps essentially aid by extending the notice of this circular.

FRUITS, FLOWERS, and CULINARY VEGETABLES, are all embraced in the intended Exhibition; and specimens of either, of a quality meriting distinction, will be thankfully received and public acknowledged. When transmitted from a distance, by public conveyance, the society will cheerfully defray the cost of transportation. They may be addressed to Messrs. D. & C. LANDRETHS' seed-warehouse, No. 85 Chestnut street.

To prevent confusion it will be necessary to present all but the *Butquets* on Tuesday the 10th. The latter may be furnished on the mornings of the days of exhibition.

Respectfully,

JOSEPH PRICE,	} Committee of Superinten.
W. W. FISHER,	
GEORGE M. COATES,	
DAVID S. BROWN,	
WILLIAM H. KEATING,	
M. C. COPE,	
J. W. BURROWS,	

THE GRATER CIDER MILL.—We have heard a good deal in times past of the invention of a cider mill called by the above name, but could never obtain information of the person and place where it was to be obtained. The accounts we had of its operation were very favorable, and on our recommending it in the Farmer applications were made to us for the name and place of residence of the proprietor, &c. but we could not give them. We are happy now to be able to state that the Grater Cider Mill can be obtained in Boston, of J. R. Newell, at

the agricultural warehouse. This mill is spoken of by persons who have used it in very high terms. The present proprietors, in an advertisement in the New England Farmer, say that these mills are drawn by one horse. Six, eight, ten, and twelve feet wheels are used, some with one and some two drums. They may be placed in a building, and so fixed as to grind upon the press, or into a trough. The following certificates will probably give the public some proof of their value.

Medway, August 8, 1833.

"This may certify that we the subscribers have made use of Joel Farnum's Patent Grater Cider Mill, for three years past. We grind a cheese of cider in one quarter of the time we did in the old mill; it grinds better, makes more and better cider; we grind up in the press, and save the shoveling of the pumice, and the juice may be extracted in less time.

JOHN CLARK, 2d.

JAMES P. CLARK.

Sherburne, Aug. 9, 1833.

"This may certify that we the subscribers have used the above named machine for three years last past, and approve of the plan of grinding apples. We save one third part of labor and time in grinding and laying up a cheese of cider. It grinds better than the old mills generally do, the cider is clearer and contains less sediment; the cider is pressed out in less time, and the mills are kept in repair at less expense than the old mills.

AARON LELAND.

JOSEPH P. LELAND.

Sherburne, Aug. 9, 1833.

"This may certify, that I have assisted in the making of cider in the above named mills, and consider it a valuable improvement in the making of cider. At one time we ground and laid up, apples sufficient for eight barrels of cider, in forty minutes, by the watch. We save one half of the time, in grinding and laying up the cheese.

JOTHAM W. ROGERS.

BARNITZ'S BREED OF HOGS.

MR. SMITH:

Springdale, York, Pa. }
August 31, 1833. }

Sir,—In one of your late papers, you noticed in terms of commendation, the breed of hogs which I have kept upon my farm; and I now offer to you a brief account of their origin and peculiar properties of value. In the valleys of Pennsylvania, the farmers generally have distilleries, and their stock of hogs is obtained from the western drovers, who collect them as they can get them. The distillery affords abundance of food, and the good and bad, when moderately fat, are sold in a mixed lot for the city markets, without much regard to quality, or any discrimination as to the separate values of the animals.

Chester county seems to form an exception; there are few distilleries there; and the farmers, to torn their means to the greatest advantage, have shown a laudable attention to their farm stocks. The breed of hogs, especially, which is preserved with great care, has a celebrity throughout the state. I have not been able to learn their origin; but incline to the opinion that they are a cross from the Chinese, with the English white Suffolk breed, of which some were imported to Philadelphia county many years since.—They are white in color, of fine form, easily fattened, and of early maturity; at one year, without extra keep, they often weigh 300.

I obtained several females of the Chester breed, and found on the farm of an intelligent man in this county, a peculiar kind which I thought valuable—they were in shape like the Chinese, but larger in growth, of a red color, with occasional black spots. The owner told me he had first obtained them from the neighborhood of Westminster, Maryland, and that they were said to be of the Parkinson breed. I procured a boar of this kind, and adopting the recommendation of the

celebrated Cline, crossed with the larger Chester breed. This is the stock I have had, and they are much esteemed by all who have seen them. They fatten easy, at any age, and when fat will weigh at nine months 200, and at a year 300 and more. I had one which was kept until twenty-seven months old, the last three months being put up to fatten; he weighed 491 neat weight. I thought this cross an improvement in some respects, but the clear white of the Chester breed was more pleasing to the eye, and the breeders I now have, are chiefly of this kind.—Those I sent to you last season and this spring, embraced both varieties—the white being of the full Chester breed, or with a very small portion of the other blood.

I have seven or eight breeders, producing from eighty to one hundred pigs in the year, about the half I dispose of currently at five dollars the pair, and this pays the expense of keeping and fattening the whole. The common stock of this neighborhood does not command more than three dollars for the best pairs, and the demand for those I have would enable me to sell, at the above rate, many more than I can spare.

I have no distillery; my mode of feeding is, the first winter feed on boiled potatoes and pumpkins, with linseed oil meal occasionally; in the summer, keep them on the clover field, say from May to November; those intended for fattening, are then put up for four or five weeks, and fed upon corn; five bushels to each in the ear (but better if ground) will bring them to full condition for killing.

I have a cheap and useful boiling apparatus, the whole cost being not more than eight dollars; it is simply a cast iron kettle, containing a barrel, put up like a hatter's kettle, with a small fire place below, and flues running up behind; a sheet iron lid covers the top, and a rough board shed is fixed about it to keep off the wind and rain. A boy in two hours may thus boil several barrels of pumpkins, and refuse potatoes or turnips, and the shop keeps moderately warm during two or three days, even in winter; a sprinkling of salt is necessary, and a few handfuls of corn meal will richly improve the mass. A piece of rotten wood or a shovel of coals from the bake oven put, occasionally thrown into the pens, is received as a luxury, and I suppose a useful absorbent.

The praises of the *poor man's cow* we often hear, but the poor man's pig I deem of really greater value. The cow, it is true, yields his family a luxury during nine months in the year, but at an expense not less than twenty-five dollars. A pair of pigs, of a good breed, the cost of which with keep and fattening will not exceed fifteen dollars, furnishes his family with five hundred pounds of meat, sufficient for his year's consumption.

Among the agricultural improvements of the day, some attention has been excited to the breed of hogs, and the mischievous notion long prevailing, that *feed makes the breed*, is going by. A valuable article was published some time ago in your paper on this subject, from the pen of your late lamented correspondent, Mr. Meade, containing many excellent hints.—The loss of this useful citizen to the agricultural community, would seem to make it incumbent upon others, to contribute occasional suggestions, which their practice or information may furnish, to further our common cause; and in the hope that the example may draw upon the leisure hours of some to follow me, I have extended my sketch to a more tedious detail than I at first intended. C. A. BARNITZ.

FOREIGN MARKETS.

LIVERPOOL, Thursday, Aug. 8.

Our cotton market towards the close of last week receded a little. Some few of the holders having given way about 1-4d, and in some instances as much as 2-3d chiefly the low and middling qualities of American cotton. Other kinds, however, such as Brazil and Surat, kept very firm, and obtained, in some instances, a little advance.

AGRICULTURE.

(From the Farmers' Register.)

EXPERIMENTS AND OBSERVATIONS ON THE FERMENTATION OF MANURES.

It has been often said that the experiments in agriculture which result in failure and loss, if correctly reported, would be scarcely less instructive than the smaller number which prove successful and profitable. All will assent to the truth of this opinion, but few are willing to act in accordance. I propose submitting a report of this character to the readers of the Farmers' Register, in which errors, caused by ignorance and inexperience, are at least as conspicuous as correct views; and as much of value was lost, as secured by my operations. Still, I am persuaded, that even from my erroneous management and mistakes, I have received profitable lessons, and that my facts and observations may also be useful to other farmers, even if my deductions are not altogether correct.

Circumstances enabled me last winter, for the first time, to devote a considerable amount of labor to the collection and preparation of vegetable matters for manures. Having but little confidence in the truth of my opinions as to the best management of manures, and not more in any or all of the innumerable writers on this subject, I determined to test my opinions by experiments, and to record my observations minutely for my future use. This journal of my operations, with but few alterations in form only, will constitute the present communication. Entertaining the opinion that the fermentation of coarse manures is necessary, but that great and needless loss is caused usually by that process, it was my aim so to conduct the fermentation as to avoid as much as possible the usual loss of its products.

A new site was chosen for the barn and threshing machine, the most convenient for making manure, as well as for storing the grain crops. Between the barn on one side, and the place intended for the stables and corn cribs on the other, a space of fifty yards square was marked off for the winter cow yard. In October, 1832, the middle of this space was dug out to the depth of fifteen inches, and the earth moved in carts and deposited on the outer twelve feet of the square, so as to form, when completed, a basin, the middle of which was two and a half feet deeper than the raised surrounding border. This border was intended to form a dry resting place for the cattle, and also to keep in the fluid parts of the manure, and to keep out rain water from the adjacent higher ground, which (it was feared) might otherwise have made the litter too wet for the comfort and health of the cattle. The soil was a sandy loam, about six inches deep, and the subsoil becoming a sandy clay about eight or ten inches from the surface—not quite close enough to keep water from sinking, but would become so by being trampled. The middle of the basin was of this subsoil, while the outer edges and the raised borders were mostly of the lighter soil. The yard was enclosed by a straight fence—and along the north side and partly on the adjoining east and west sides, a sloping slab shelter was made to protect the cattle in bad weather.

All the cattle, except working oxen, grass heaves intended for early slaughter, and milch cows, were penned here at night from October 15th, and a slight littering was given at first of straw and leaves, (heaped in the woods the preceding winter,) and which was increased somewhat every day, by similar materials, and soon after by the stalks of the first gathered corn. As the cattle were turned, during the greater part of the day, into a clover field, they eat little or no dry food for some weeks, and during that time no more litter was given than enough to absorb the animal manure. Afterwards corn-stalks and straw were added rapidly, and leaves as often as the other labors of the farm permitted them to be hauled. The raking of the new crop of leaves for litter, was begun

October 19th, on a few acres of land covered exclusively by pines of the second growth. Pine leaves, which are considered the best for manure (and certainly are the heaviest and easiest to manage) begin to fall early in October, and by the 29th had nearly all fallen, when the leaves of deciduous forest trees were just beginning to drop. Being satisfied that every rain which falls on them afterwards, extracts some of their enriching principles, I wished to have them heaped as soon as possible after falling. At any time, leaves must furnish a poor material for manure, and much more so as usually gathered after exposure to a winter's rains. My later raking (as leisure permitted through the winter) was in woods of mixed pine and oak, part of which had been raked over the winter before, and the balance never, so that old as well as new leaves were brought in. Besides the leaves, the materials for manure were, the stalks and other forage of a crop of 560 barrels of corn, and the straw of 2000 bushels of wheat—and perhaps, 9000 pounds of clover hay. These were for the stable and other pens hereafter to be described, as well as this, on which no food was used except straw, corn-stalks, shucks and tops. The number of cattle from October 15th to December 22d, on this large pen, was thirty-five on an average; and forty-five after that time.

Nine mules were kept in a littered, unsheltered pen, and three horses in covered stalls in the same enclosure. The manure there made before the 12th of October, had been moved out and ploughed in for wheat, and the yards and stalls were then littered again with old leaves and straw, and (from neglect) not enough was given either for making manure, or for the comfort of the animals, until December 22d, when the litter was found to be only from four to six inches deep, compactly trodden, and wet throughout—enough so in some places for fluid to trickle from it, when dug into for examination. The horses and mules were regularly worked, and fed plentifully with corn as well as fodder or clover hay.

A third pen was for eleven working oxen, in which they had been penned on litter and fed with hay or other long forage, since October 4th. They were generally kept at work.

December 24th.—After sixty hours continuance of temperature below the freezing point in the shade, (and the nights much colder) examined the warmth of the litter in the three pens, between nine and ten o'clock, A. M.

The litter of the ox pen (which for distinction will be called No. 1) was 14 inches thick in the middle, and lessened to eight near the edges—compact and moist, but dryer than the mule litter. Two different places shewed the following degrees of temperature.

1st place, at 6 inches deep	-	-	-	-	47°
— — 10 — — —	-	-	-	-	49°
— — 14 — — (the bottom)	-	-	-	-	56°

2d place, where thinner,					
At 6 inches	-	-	-	-	47°
9 — —	-	-	-	-	52°

The mule pen, (No. 2,) when in the wet state above described, had two days before been well covered with dry leaves. In three places at the bottom of the litter and touching the earth, the temperature was 48°, 49° and 47°—and at a less depth immediately over the two first, the thermometer showed 46° and 44°.

In the farm yard, (No. 3,) owing to the small number of cattle compared to the space, the litter was not made compact as in the other pens, and several inches of the top, which had been laid on since the last rain, (two weeks before) was loose and dry. The moist and more compact, was ten inches thick in the middle, the deepest part of the yard, and not more than four on the outer parts.

Temperature of three different places, in compact litter, where thickest,

6 inches deep	-	53°	58°	57°
10 — —	-	47°	58°	55°

In thinner parts of the litter,				
At 3 inches deep	50°	*52°	*50°	

The two last (marked *) were under the shed on the raised border, and were most exposed to the sun from the south. In this yard, the thickest part of the litter was the warmest—and the middle of the bed was generally warmer than the bottom. In the ox pen the litter was evidently best rotted (or the texture most weakened by commencing fermentation) though this effect was very slight. The mule pen litter, which is much the richest, but is also the thinnest and wettest, had the lowest temperature. Query. Had not the recent cold weather lowered the warmth previously acquired from fermentation? The litter of the fattening hog pen, which was mixed with a large proportion of earth, was 41°—and the inside of a dry stack of fodder (examined for comparison) at eighteen inches from the outside, and six inches from the bottom, was at 40°. The lowest temperature of the manure being 7° higher, showed that fermentation was going on.

January 1, 1833. A heavy soaking rain, and the weather very warm for the season. As soon as the rain ceased, began to dig up and heap the manure of the ox pen, (No. 1.) The oxen had not been on it since December 22d, when they had been moved to a part of the farm yard, (No. 3.) January 2d, at nine o'clock A. M., the temperature of the air in the shade was 51°—and at the same time the manure not yet heaped (though it had been somewhat loosened by the hoes the evening before, and possibly fermentation might have been thereby excited) was 65° to 71°, in different places. The heap made between 16 and 18 hours before, was already throwing out warm vapor, smelling of ammonia, and when the bulk was found to be 99°. This unexpected heat and the ammoniacal smell was unexplained then; but afterwards, when using the manure, I learned from my overseer, that when he began the heap in my absence, 20 or 30 hand barrow loads had been brought and thrown on of the rich litter of the covered horse stalls—but finding it too dry for heaping, he had stopped any further addition.

The heaping which had ceased since the preceding night, was now resumed and finished. The whole heap, thrown up lightly by forks and shovels, and not trodden, (except a little at the last to shape the top,) was raised to seven, and in part to eight feet high, the sides cut down as steep as they would stand, and the top left depressed in the middle. A cover of wet leaves (which had been laid in the adjacent road to be trodden and absorb water, but contained no dung) was thrown over the top to the depth of twelve inches, lying as they fell from the shovels. Over the leaves, soil was thrown about four inches deep, and then sowed thickly with oats. This cover of earth was given, first, to keep the whole surface of the manure moist, instead of its drying and remaining unchanged six or eight inches in, as when left uncovered; second, to cause all the seeds of cheat and other weeds to sprout, and by that means to perish; third, to absorb the escaping gases, if that is possible; and fourthly, to use those gases in feeding the growth of oats, both to add to the bulk of manure, and to furnish a test or measure of the escape of rich aeriform fluids. The escape of visible vapor ceased with the adding to the heap. No fluid trickled from the heap, which showed it was not wet enough.

The litter of the other yards having been recently added to largely, was not wet enough to heap. No. 3, tried in different places, was at 60°, 61° and 62°.

I had never heaped manure before, earlier than the beginning of spring weather. My object now, was to have the fermentation completed with as little excess of heat as possible, and to avoid the great loss usually incurred from violent fermentation. If fermentation would go on, it seemed that cold weather would be the best to keep it moderate.

From January 1st to 4th, warmer than usual for the season, and much more so from the 4th to the 7th. Rain on the 7th, and at night the first snow that had fallen during the winter, and a change to cold wea-

ther. Several rains and more snow by the 10th, when it became excessively cold, and continued so until the 12th. Thermometer not observed out of doors, but was at 20° between 8 and 9 o'clock A. M. on the 11th, in my passage, which is between two rooms with good fires, and in one of which a fire was kept up through the night as well as day. On the 10th, the litter of mule pen (No. 2) was heaped when very wet, and mixed with the litter of the covered stalls. Being absent at the time, no observation was made by the thermometer; but from the extreme coldness of the weather, I suppose that every part of the manure must have been reduced nearly to the freezing point by exposure to the air, as it was thrown on the heap. To have as little of surface as possible, and to prevent the moles treading on the manure, the heap was made to fill a round pen of six feet high, and raised above four feet still higher in the middle, or ten feet in all. No cover of earth or leaves had been laid on. When I first saw the heap, on the 12th, there was no outward sign of fermentation having commenced; and, at 18 inches depth from the side, the temperature was 42°. I feared that it would not begin to ferment, without a complete opening, and second heaping. Dark colored fluid had exuded from the heap, and continued to do so for some days later, forming puddles around the base.

The heap No. 1, by January 12th, had sunk to five and a half feet high. Most of this loss of height must have been caused merely by the compression of the loose litter. No vapor had been seen to escape since it was finished, whence I supposed that the cover of earth, by its pressure, had stopped the fermentation. But on striking into the heap with a grubbing hoe, warm steam came out. Before this, there was no outward indication of the slightest warmth, except that the outside was thawed in a few spots, and snow was but thinly sprinkled on a few other places, though the ground was covered more than an inch deep. The fermentation however, had been sufficient to rot the manure enough for me to thrust the helve of a hoe two and a half feet in the side, without much effort. The thermometer put into holes so made in different places, and about eighteen inches from the surface, showed the following degrees of temperature: 118° on the north side, three feet from the ground, and where the mixture of stable manure was made.

100° south side, at the same height.

78° another place.

68° — — one foot from the ground.

64° — — — — —

62° deeper in the same hole.

Poles had been placed in the heap to show the temperature by drawing them out and feeling them. This had been done on the 10th, and it appeared that the heat was greatest about two feet from the outside. But few of the oats had yet come up, and those mostly on the south side, showing that the heat of the sun, more than of the manure had caused them to sprout.

On the 14th was the first thawing in the shade, and indeed, there had been but little in the sun. Observed a barely perceptible escape of vapor from a fissure in the crust near the top of the oldest heap, (No. 1.) Began to cut away the outer part of one side of the heap, (where the greatest heat had been found,) for the purpose of examination, and to use some of the manure in an experiment. A perpendicular section being made, shewed that the manure was enough rotted for use, (about half rotted,) from the outside cover of leaves, to two, or two and a half feet deeper in. This best rotted part was still very warm, and in different places showed the following degrees of temperature—118°, 110°, 110° and 100°. Some spots were "fire-fanged" or moldy—and these were evidently caused in most cases by the mixture of stable manure, which I then first learned had been made. In some of these moldy spots, the heat was 142° and 146°. The interior and lower part of the

heap, from the earth to two and a half feet high, was 116°, quite moist, and more so than the upper part, but was very little reduced by rotting, from being so much compressed. The vapor poured from all this digging as from a kettle of boiling water. By the next day all visible escape of vapor had ceased, except a barely perceptible issue at a fire-fanged spot—but it again poured out, though in less quantity, upon cutting in with a hoe, for inspection. At eighteen to twenty-four inches within the perpendicular cut, in the upper and most rotted part, the temperature had fallen to 96°—and to 96° and 92°, at the same distance within the lower and unrotted part. In a fire-fanged spot it was 112°. Dug into the opposite (south) side of the heap, and discovered no moldiness, except a spot so small that it would have escaped common observation. On this side, the unrotted manure came nearer to the surface. Temperature two or two and a half feet in, was 95° in the most rotted, and 92° in the least. The weather had become much warmer within the preceding twenty-four hours.

The observations made on this body of manure seemed to justify the following inferences: 1st. That the heap was made too high, to allow the lower part to rot speedily: 2d. that the heat and moisture remaining in that bottom, proved that the fermentation, though retarded, was still going on, and in time, would be effectual: 3d. that as no perceptible vapor had escaped (with the single slight exception stated before,) after the heap was finished and while covered, there could not have been any material loss of fertilizing matter, from the process of fermentation. A paper moistened with diluted muriatic acid was exposed this day (January 15th) to the vapor, as was also the open vial containing it, and no dense fumes were produced, which Davy tells us would indicate a loss.

On the 14th, began to heap the litter of the farm-yard (No. 3.) making the heap in the middle and lowest part. The litter there was eighteen to twenty inches thick. The part which remained to form the foundation of the heap, (as was done in the other cases,) was first dug and well loosened before throwing more on. The temperature was highest in the thickest part of the bed, and in different parts of the yard was 66°, 61°, 55°, 62°. To my surprise, after so much rain and snow, the litter was not saturated with water, nor indeed was every spot moist. Fearing that this would make fermentation imperfect or irregular, stopped the work, after making the heap about seven feet high, on a circular base of twenty to twenty-two feet across. Fenced it around, to prevent its being trodden by the cattle, and filled the space on the yard just cleared, with fresh litter.

Notwithstanding the change to warmer weather, this heap (No. 3) was, on the morning of the 17th, still so much frozen on the surface generally, that on walking on it, my weight did not always break the crust of frozen litter, though the lightness of the mass caused the surface to be depressed where trodden upon. Vapor (which seemed altogether watery, from its want of odor,) was issuing from one point, the highest of the heap.—The thermometer sunk two feet in that place, showed 74°. No where else did the heap exhibit any evidence of fermentation being excited. In the side, one foot in, it was 50°.

No vapor was issuing from either of the two older heaps. No. 2, showed a slight internal warmth, (not measured,) but no vapor from pulling out a stick thrust in three feet deep. The heat had increased somewhat by the 19th, but still no vapor perceptible, until the heap was dug into for examination, when it issued, but as from a very moderate internal heat. The thermometer at a foot and a half below the top showed 60° only—and on the slope and something deeper in the body, 77°.

The oldest heap (No. 1) was examined also on the 19th on the south side, and deeper in the same place tried last. The rotting had gone still lower, not more than a foot of the bottom now remaining quite unrotted. The general temperature was much lower,

(which was very desirable,) except in the unrotted bottom. This part was at 74° near the junction with the more reduced body above, and 60° in a mass of wet straw, which had not even changed to a dark color. The upper and more rotted part was, in different places, 72°, 80°, and 91°—the last in the only visible fire-fanged spot, and where most vapor showed, upon digging in the mass.

From the heap commenced in the cow-yard, (No. 3,) vapor was now issuing at most parts of the top—and on thrusting a stick down two and a half feet through the loose and open materials, where most vapor came out, the heat was found to be 125°, and 106° at another place. The sloping sides slightly frozen, and at one foot and a half in, showed 50° only. The vapor, from its want of odor, seemed still to carry off little or nothing except moisture. On the 21st, it issued still more abundantly from the top, and conveyed a scent of rotting vegetable matter—not ammoniacal. Temperature 121° at one foot and a half deep. This heap was not only too dry, but was certainly of very poor materials, and its rapid and violent fermentation was quite unexpected. Was it caused by the loose and open texture of the mass, and the quantity of air consequently enclosed? Threw a cover of a foot thickness of litter (cut from the edges of the heap) over the top, to arrest and save the vapor. By thus cutting into the sides, it was found that fermentation was going on throughout. At different places, from five to seven feet within the first circumference, and from eighteen to twenty-four inches from the earth, the following various degrees of temperature were exhibited—60°, 65°, 85°, 76°, 91°, and 94°. The greatest heat of the sides was generally near the bottom. On the 22d, again covered the top with a coat of cold litter from the sides, as vapor was pouring out in greater quantity than before. Where most issued, a hole was opened for the thermometer to the depth of two feet, and the heat found to be 145°, the highest yet known. Another place from which less issued was only 76°. The weather warm then, and for several days previous.

This day the first vapor was seen to rise from the mule pen heap, (No. 2.) On January 24th, a heavy rain, which, however did not make the litter of the farm-yard wet enough; but as no better state could be expected soon, we proceeded to heap it around the first part of No. 3. The heat of this on opening the top, was found by my overseer too hot to be borne by his hand at the depth of eighteen inches, and the top was then covered over with three inches of earth, which had not been done earlier, from the fear of its preventing fermentation in so poor a mass. This served to stop the visible escape of vapor, though not to check the fermentation too much, (if at all,) as I found it on the 28th, at eighteen inches below the earth, to be 102°, and in another place, 90°. The heaping was stopped on the 28th, about one-fourth of the yard being still left. On this; where the litter was thickest, (about twenty inches,) it was fermenting as it lay, and vapor rose from it as it was dug into for heaping. Its temperature in different places, was 80°, 70°, 59°. The fermentation, however, was very unequal: some spots were fire fanged, and others still dry and unchanged. The heap (built around the first work) was raised generally to six and a half or seven feet, on a circular base, twenty-two yards across. The heap was fenced in, and fresh litter thrown over the uncovered part of the yard. Earth three inches thick was thrown over only a small part of the top to try the effect. The first of the latest heaping was already smoking (on the 28th) in some places, and there the heat was found to be 90°.

30th. A steady slow rain nearly through the day. The out-spreading edges of No. 3 cut down and thrown upon the top. The weather generally warm latterly.

31st. The rain had served to lessen greatly the issuing of vapor from the heap No. 3. Proceeded to add the balance left on the yard to the same heap,

raising the part now thrown up to eight feet high.—The oldest central part had shown no vapor since being covered with earth, (on the 25th.) but, on running a pole perpendicularly through the crust, and about eighteen inches lower, the heat was found to be 131°. In a part of the later heaping, (on the 25th.) where most vapor issued, it was 105°—and where none was visible, only 66°. Slowly raining again.

February 1st. Finished heaping all the old litter to No. 3, which then occupied so large a portion of the yard, that there was not enough room left for the cattle, though they were still confined to the surrounding space. The heap was thirty yards across the base and seven and a half feet high when first built.—Earth was thrown over the greater part of the top, (where not done before) but very irregularly, as the laborers could not see how to aim the casts from their shovels. Much increase of vapor before this operation.

2d. Found that the covering of earth was generally too thin. Though no vapor was visible, (at 9 o'clock, A. M.) the loss of ethylia was evident by the earth being thawed and moist, and the surface of the lumps being colored brownish, as if they had been soaked in the drainings from a dung heap. This was on earth dug and thrown on only twenty-four hours before. This appearance is enough to prove that more loss would take place without the covering of earth being used to arrest it. This deposit of solid matter is not found below, nor within the cover of earth, but on its new surface—and as much on the clods, as on the pulverised parts; therefore, it must first pass through, and then (on meeting cold air and being condensed) is precipitated on the earth, and probably fixed there by some chemical power. Where the earth had been laid on more thickly, it was generally slightly frozen, and the escape of vapor was limited to different spots where there was either no cover of earth, or where the materials below the cover were very coarse and open. More earth was thrown on all such places that could be reached, and the remainder that were too distant from the outside to be covered, were trodden, to make the surface more close.

The yard was again well covered with new litter. Two pigs were brought to the yard to get their living out of the grain left in the straw, and to mix the rich with the poor materials, by rooting about and separating the dung. This step was suggested by the appearance of the last heaped litter; and I believe that if such laborers had been employed from the beginning, the deep litter would (in time) have been sufficiently and equally rotted, without heaping, and no fire-fanging would have been produced. If such would be the case, heaping is unnecessary, except to hasten the fermentation of the manure for early use.

The stable pen heap (No. 2) had thrown out no visible vapor, except on parts of two days, and then but little. On January 31st, the second of two very warm days, many plants sprung up on the top of this heap, from grain left from the food of the horses, and the seeds of weeds in the litter. As the heat is never sufficient to kill seeds in the outer six inches of a manure heap, and as it is also generally too dry there for them to sprout, (at the usual time of heaping in the spring,) it is not surprising that so much *cheat* and *spell*, always spring up on manured land, when those weeds were plenty in the crop of wheat from which the straw for litter had been obtained. This same warm day first brought up the oats on the flat top of No. 1, they having before sprouted only on the sloping sides, where the cover of earth was thinner.

February 3d. Vapor was still issuing generally from No. 3, and conveying enriching matter, as appeared from the scent. The earth last thrown on had not served to cover all the surface. If I had foreseen that so much earth would have been wanting, the labor of digging out the centre of the yard might have been saved, as a few years use in this way will lower it sufficiently.

9th. No escape of vapor visible for some days preceding, (at least as late as 9 o'clock, A. M.) except at one spot which had not been covered. But many places show by the brown color, and sometimes by the moisture of the covering earth, that something is, or has been lately passing through. In warm weather, the steam is not made visible by condensation, and therefore its escape is less easy to detect. The temperature of different places, one foot and a half below the top, was as follows: 112°, 96°, 78°, 155°, 95°, 90°, 150°, 98°, 113°. The last named was the temperature of the oldest central part, and the preceding number (95°) shows the heat of a part of the new heaping, which on Feb. 2d, had been well covered with earth, and pressed close by being trampled on. The hottest places were found where most ethylia appeared to have escaped—and where least warm, there was no mark of such loss. The average temperature of the whole would have been much lower than of these numbers—probably between 90° and 100°.

Carted away for use the balance of No. 1. The interior of the bulk seemed no more rotted than it had been two weeks before, though it was still warm. The heat had entirely subsided in all parts near the surface, and in some cases, as far as two feet inward.—The temperature in different places was found to be 76°, 77°, 88°, 83°, 88°, and 94°—the two last being in the part least rotted. The cold part of the heap was as much reduced as I supposed desirable.

Began to carry out No. 2. This heap was still the wettest, and showed moldiness in only a few spots. Its general temperature was low, and it was less rotted than No. 1, though the fermentation was still in progress. The hottest places found were 96° and 91°—elsewhere 86°. These measurements were made at two and a half feet within the bulk. Nearer the surface the heat became less. This heap, though much the richest, and not protected by any covering of earth, had passed through a more general fermentation, and seemed to have sustained less loss than either of the others.

March 2d. Dug into No. 3 for examination. The heat much abated, and much damage found from fire-fanging.

8th. Had been some days carting manure from No. 3 to the field intended for corn, and spreading and ploughing it in. The heap had sunk to about four feet; but much the greater part of its loss of height (as in all other cases of dunghills lightly heaped) was from the mere subsidence and compression of the materials. The upper half seemed enough reduced by fermentation, (or was in a more than half rotten state,) but the lower part was not much changed.—Fire fanged places were frequent, and most so where the manure was best rotted. An empty barrel, open at both ends, had been set on the yard, and covered over by the oldest part of this heap, to try what effect would be produced by that bulk of air surrounded and enclosed by the fermenting manure. The barrel was reached this day, and the surrounding manure was found to be somewhat better rotted, and having more fire fanged spots, than elsewhere. My thermometer having been broken, prevented any observations of temperature. In the first week of March, a large part of this heap had been moved to a distant part of the field, and there heaped again, about six feet high. The earth was then too wet for the manure to be distributed over the field, and this moving and second heaping was done to lighten the future labor of carting, and also to try the effect of a second fermentation being excited. It recommenced but very slowly; vapor did not show generally over the heap until the 18th of March, when a thin sprinkling of earth was thrown over part of the top. The vapor was still visible on the 28th, when the weather was very cold.

It should have been stated that the cattle were confined generally through the day to the pen, (except when driven to water,) during the depth of winter. After the clover began to spring, they were al-

lowed to pick a little of it every day, and about the 20th of March all were moved to another pen more convenient to their pasture. It was evident that their litter given since February 1st, was too dry and too poor of itself, and too little mixed with animal matter, to be fitted for spring use by heaping.

May 4th. Carting on the corn land (just ahead of the first horse hoeing of the young plants,) the manure drawn from No. 3, and heaped a second time.—It was still quite warm, between 110° and 120°, as was supposed from the touch—and more rotten and better reduced than any of the other heaps—the lower half less rotted than the upper. Not much fire-fanging perceptible—though something of it seen in every part. The portion that had been slightly covered with earth was least rotted, but the difference was inconsiderable. Vapor still poured out where the heap was opened, and was the more easily observed as the weather was cold and damp.

No. 1—The ox-pen manure made 165 mule loads.

No. 2—The stable-pen — — 234 — —

No. 3—The cow-pen — — 1365 — —

The last quantity includes that heaped a second time in the field, 141 loads.

From all the observations which have been detailed, (I fear at tiresome length,) and from all the errors committed, I think the following inferences may be relied on.

1. The greatest error was not making the manure of No. 3 wet enough. This deficiency might have been easily prevented by turning streams of rain water into the yard. The wetter the heap, provided it does not stand in a pool of water, the more gentle, regular, and the less wasteful will be the fermentation.

2. The heaps in every case were made too high, and the fermentation of the lower part of the mass retarded or prevented by the compression caused by the weight of the upper part.

3. The want of sufficient moisture instead of preventing fermentation, makes it more rapid and violent—and with sufficient access of air produces fire-fanging, which destroys much of the value of manure so affected. The richer manures (as stable litter alone) are most liable to this disaster; but the very wet rich manure, (No. 2,) heaped in cold weather suffered but little, and much less than the very poor but dryer and more open heap, No. 3.

4. Manure will ferment in our coldest weather, and therefore we lose time by waiting for the beginning of spring to construct our heaps, and cause damage by the increased violence of fermentation.

5. We need not fear, by using the greatest quantity of vegetable matter to make our manure too poor to ferment properly and in good time.

6. If enough water had been introduced previously, No. 3 might have been heaped by January 1st—and the second littering also before the winter was over.

7. The fermentation of all the heaps would have been more complete, and probably without farther waste, if they had been left undisturbed until just before planting corn. But this was one of the many cases in which convenience directed more than reasoning. If the carrying out had been delayed until the manures were in the best state for use, the occurrence of wet weather and the pressure of other farm labors, might have prevented the application being made early enough for the crop of corn.

The weather through the winter was generally milder than usual, but there were three short excessively cold spells. The last of these was after the beginning of planting corn, and on the morning of March 30th, the earth was too hard frozen to plough.

The effects on manures of the important and mysterious process of fermentation, will never be understood until chemists shall undertake the investigation—and not in the study and laboratory altogether, but also in stables and amidst dunghills. I fear that we shall never see one make the attempt in any way—though the investigation offers and promises results

that would be most honorable to the discoverer, and of incalculable value to agriculture, and indeed to the human race. Chemists neglect agricultural investigations, and seem to consider them as unworthy of scientific research. Yet, if a discovery was announced of some new metal, or new acid, found so rarely and in such small quantities, that the whole globe would never furnish a pound together, and of which no man could conceive any possible use—every chemist would feel interested in the subject, and more would be done for its investigation than agriculture has ever owed to their whole body. J. B.

(From the Eastern Gazette.)

ON THE IMPROVEMENT OF LAND IN THE STATE OF MARYLAND.

The following paper was read before the Board of Agriculture for the Eastern Shore, by Gov. Stevens, and by them is now ordered to be published.

At the present depressed condition of agriculture through the State of Maryland, and particularly on the Eastern Shore, I conceive it to be the duty of every farmer, however limited his knowledge and talents may be, to aid and assist in raising the character of our lands, and to impart any practical information he may possess relative to their improvement,—and we as a board of trustees should be more desirous of disseminating our experience and opinions that the public may not view us as idle, negligent stewards—I, therefore, as one, proceed with pleasure to answer, as far as my experience justifies, a portion of the questions that have been suggested by the board.

Question first.—What natural resources of manure have you? which do you prefer? and how do you use either sort you have? and the quantity per acre?

Answer.—I have two natural resources of manure, viz: *marl* and *salt marsh mud*; my marl is composed of marine shells, mixed mostly with yellow sand or light earth. The shells are in a high state of decomposition, and well dispersed among the soil; in fact, so much so, that I am and have been for some time well convinced that what I call sand is for the most part decomposed shell; there is also a stratum of yellow clay over the shell, which I consider very good, and am in the habit of cutting it down and mixing it with the shell parts as I draw it out. Whether this clay has ever had shells with it, I am at a loss to know, though I consider it good manure. I have frequently questioned my marl digger to know if he has ever seen impressions of shells in the clay; his answer was in the affirmative, but I never have seen it. I think the marl much more valuable than marsh mud. I have received evident advantage from marl alone, both on stiff and light lands after the second crop, and find it very durable. I cannot say I have great confidence in marsh mud, though I have been using it for several years. I am inclined to believe it should be thrown up in large banks as it is taken from the ditch or canal, as will hereafter be explained, and there remain twelve or eighteen months prior to its application to the land; but this would require an extra moving, which perhaps economy forbids. I discover much more benefit from the dirt I draw from the heads of the marsh where the essence or strength of the land has been deposited for many years. I generally apply about sixty small cart loads of marl to the acre, and forty-five to fifty of salt marsh, if conveyed immediately on the land.

Question second.—What are your means of making manure, and the means you adopt?

Answer.—I am a strong advocate for compost manure when it can be made with economy, which should be strictly attended to by every farmer. My usual habit is, as soon as I get my wheat trodden out, and my corn secured in the fall, to litter my farm yard (and if my cultivation is far off, I select some warm spot near the field) with leaves and pine shatters, (preferring the former.) I then draw in a quantity of corn stalks, which I repeat at every convenient

period, so as to have the greatest part of them in before Christmas where I pen my cattle, having a shelter for them; my racks are then filled with straw,—the stalks not only afford good feeding, but, when trampled on and broken up, they present an excellent bed to receive the urine and dung of the cattle.—During the winter, I draw in dirt, leaves, log beds, rotten pine stumps, and every thing which I think will add to the quantity and quality of the manure. My horses are well littered with straw, and sometimes with pine shatters; the stables well cleaned out, and the manure deposited near the door in a long bed, where dirt, marl, &c. &c. are drawn on until well covered about six inches deep, the manure again spread on every morning, as taken from the stable, until the dirt is covered about six or eight inches deep, and so continued through the winter, alternating the dirt and manure, which prevents the fertilizing salts of the manure from flying off, and converts the dirt to good manure.

In the spring I select some favorable spot near where I propose to use my manure, which I denominate my *summer cow pen*, into which I draw leaves and shatters, then the remnant of my corn stalks which are not exhausted during the winter; there I pen my cattle every night, during the summer and fall, until the weather forces me into winter quarters, with positive orders never to turn them out in the morning, until they are hurried round the pen five or six times by the cow boy, by which means much manure is preserved, which would otherwise be scattered out of the pen, as all stock feel disposed to dung immediately after they are disturbed, not forgetting to replenish my pen whenever I deem it requisite, with dirt, mud, marl, weeds, &c. and every thing which will be beneficial, which I use the following spring—for rest assured the *manure bank* is the farmer's *gold mine*, out of which he digs all his wealth and independence.

Question.—Have you any particular system in relation to manures, and manuring, and what is it?

Answer.—This I consider the beauty and actual support of farming. A regular system in all its departments is as requisite as in merchandising, or conducting a well regulated government, and no part should be more particularly attended to than the manuring, which is not only the strong support of the farmer, but enhances the value of his property, and adds to the character of his state and strength of his government. For many years I have pursued a system, as far as practicable, which experience has taught me to believe has been a great improvement to my property, viz:—As soon as my crop of corn is secured, I put in operation my marl carts—my regular rule is to have one man at the bank, and occasionally allow him a lad to assist in cleaning the top sand and earth from the marl, (as my marl unfortunately is very deep.) I allow a small boy to drive who tilts the manure out, and returns with the empty cart to the bank, and again takes off the one loaded. Should my distance be so great as to allow three carts, I add another small boy who drives from the bank until he meets the other driver who receives his cart and takes it to the place of deposit, the other returns to the bank, thus no time is lost, the carts are constantly moving. If necessity requires, I add a fourth cart in the same way, regulating my number by the distance of drawing. I thus make my boys from eight to twelve years of age, perform as much service as a man who is made to drive. These carts continue their labor, when weather permits, on the corn ground, either with marl or compost, until the corn is planted, they are then occupied manuring in the hill as long as prudence will permit to drive over the corn. My next step is to plough up a space about ten feet wide on the head land in the same field, provided I have no fallow, (which I have abandoned for a few years,) where I deposite my manure made in my farm yard the previous winter, which I secure from the sun by the scowerings of the ditch, and ditch bank, which I

deposite in the fall following on the same part of the field convenient to the bank, after I take off the corn stalks—thus the manure is ploughed in with the wheat. By this process I get my ditches scowered, and the bank taken down, whereby the water has a free passage to the ditch, and the dirt is all converted into manure, and one moving of the dirt saved.

With a view of keeping my carts constantly employed, I reserve part of the field from corn, on which I draw some kind of manure between the time of making my compost and putting it out, viz. between June and October; should I make fallow, which has been the case, and may again return to it, then my manure is all applied to it, from planting corn till seeding wheat. I frequently put my marsh mud or compost on the same ground I do marl, and the same year—and here let me remark, provided my manure is put on fallow, the ground is ploughed between the rows of marl previous to spreading it, so that the marl may not be put too deep, it is then cross ploughed, harrowed, rolled, and laid off before the compost is applied which is ploughed in with the wheat.

I fear I have been tedious on manures, but their high importance must plead my excuse; and before I quit the subject, I beg leave to state the method I now pursue relative to marsh mud, viz: in lieu of sinking pits through my marsh which was formerly the case, by which means I destroyed my grass and left traps for my stock. I now commence at the creek, digging a canal about ten feet wide, and as deep as it is possible to go, for the deeper the better the manure, taking care not to dig farther in length than I finish in one day, as during the night it fills with water. The next day I proceed in the same manner, and so continue, leaving a small block at the commencement of every morning's work to keep back the water; I thus progress until I arrive at the fast land, then cut out those blocks. I proceed in this manner with canals about fifty or sixty yards apart, (if circumstances will admit,) by which means I make my marsh more firm, and it leaves reservoirs to receive the water on high tides, which prevents the overflowing of the marsh, and makes the grass much better. The top I convey to my cow pen if convenient, the balance is carried out on the land.

Ques. 4.—In what state ought manure to be hauled out into the field to impart most benefit to land and crop?

Ans.—On this question a variety of opinions exist, but I will in a concise manner state mine. Much depends on the kind of soil, if a hard, stiff, white oak clay bottom, I should not hesitate to pronounce the half rotted manure preferable, inasmuch as it will tend to open the pores, and divide the stiff, adhesive particles, and more freely admit the dews and rains, leaves the land in a better condition, and advances the crop. But should your land be of a different complexion, say light loam or sandy, I would then advise the manure to be applied in a well rotted state near the surface.

Ques. 5.—Have you tried various modes of planting and growing Indian corn—and which do you prefer.

Ans.—On this I can say but little, having mostly pursued the old habit of listing and double listing, then planting four feet nine inches each way. I did twice in a small way list on clover with four furrows, nine or ten feet apart, then dragged and rolled down the list, opened the middle of the list with a single furrow, planted my corn in the drill and worked it in that manner until some time in June before I split out the middles—at that time the clover was in full bloom, and about eighteen inches high, the middles were turned in, then rolled down close, in which state they remained until I seeded my wheat. I did not conceive my corn was better than if I had put it down in the old way, but the land was much improved by ploughing down the clover, my crop of wheat at harvest was great as to straw, but as to grain not so fine.

One other time I laid off about five acres for drill

corn in the following manner, viz: I ploughed six or eight furrows back to back, leaving ten feet middles, those furrows I dragged and rolled well, then procured a large plough, opened a furrow exactly in the middle of the eight furrows which I filled with well rotted manure, then covered the manure by running a furrow up and down with the mold board towards the manure, throwing the dirt on it—and in those furrows I planted my corn in the intermediate space of each row. The corn was then worked without disturbing the manure which was left to feed the roots, the two outsides being ploughed, and a small harrow run down the middle on the manure to destroy the weeds; it was also hoed. One-half of the five acres was as above, the other was managed in the same way except putting the corn in a single drill on the manure. The first method yielded the most corn, and I am of opinion if a farmer could cultivate his crop so, he would make more corn than by any other cultivation.

Ques. 6.—What third crop, or additional crop do you believe that a farmer can most advantageously grow, with a given number of hands, who grows a full crop of Indian corn and wheat?

Ans.—If any, I would say hay; for it is a self evident fact that farmers on the Eastern Shore are very deficient in this important article of farming, which needs no illustration; but I have been fully convinced for some time our lands are tired of wheat and corn—and require some change, say oats or rye.

HORTICULTURE.

(From the Southern Planter.)

APPLICATION OF MANURE—DECAYED VEGETABLES.

Gardening is a most pleasant as well as innocent amusement. How pleasing it is to see the increased attention paid by the community, not only to useful but ornamental gardening. A taste for ornamental gardening has of late begun to display itself generally throughout the whole community. Instead of a piece of ground roughly managed, and on which a few cole worts, beans, &c. are planted to answer the case of present necessity, we behold beds neatly laid off, the borders of which are neatly lined with flowers of various and most beautiful colors.

We would respectfully suggest, that our mode of manuring, particularly for kitchen gardens, is susceptible of great improvement. Instead of using animal manure, as almost all gardeners are now doing, substitute in its place vegetable manures. Vegetable manure is decidedly preferable to animal. It does not contain that heat which in animal manure proves so destructive to vegetables in dry seasons.

The following rules will suggest the mode by which this species of manure should be governed. In gardens, generally, vegetables are planted in straight rows or drills; these drills should be opened to the depth of at least six or seven inches between the rows already planted, and the vegetable matter taken from the sides of the rows carefully placed in the new made trenches, and neatly covered over. This method should be pursued as often as the garden is hoed, not only with the grass, weeds, &c. but with the declining vegetable matter of the garden itself, such as the potato haulm, the pea haulm, the bean haulm, the decaying cabbage leaves and cabbage stalks, in short the whole vegetable refuse of the garden. By doing this in its fresh and green state, the gardener is more than repaid for his trouble. In quite a short time, by this process, the green and vegetable matter ferments, rots and returns to the earth much more nutriment than was taken from it by the preceding crop.

When the asparagus beds are dressed, the earth should be taken from the beds to the depth of six or seven inches, and a coat of this vegetable manure should be placed on it, and the earth carefully returned to its original place.

Strawberries, until latterly, have been an object of less attention than almost any other vegetable. What is the cause of this? They are a most delicious fruit! The reason must be this: they require more attention and exhaust land quicker than other vegetables. The usual manner of planting them is in hills or straight rows; and from their known predilection to exhaustion, a change of beds every two or three years is thought indispensable in order to keep them in their sound state. Can they not be cultivated without the trouble of so often changing the bed? Let the following experiment be tried, although it is contrary to the plan in general practised. Let them be planted in straight rows at a sufficient distance apart to allow of a trench sufficiently wide, say eight or ten inches wide, and the same in depth, and let them be filled with decayed manure, say of leaves, straw and compost, which may be found about the farm yard, poultry yard, &c. In the months of October and November, there would be no necessity, or at least that necessity of removing them from one bed to another, as heretofore practised. Instead of removing them from one bed to another, let them be removed from one trench to another on the same bed, and then fill up the trench between either row, as before suggested. This mode, although contrary to the general practice, seems to be reasonable, at all events, the experiment might be tried with very little trouble or expense.

Mold composed of vegetable manure, thrown up in heaps, is unquestionably of great value; but by burying it in the above manner, it becomes much more nutritive and rich. It has been thought by some that vegetable manure thrown in heaps above the surface of the earth loses nine parts out of ten of its nutritive matter. It must from the nature of things lose far the greatest part; add to this the length of time consumed in rotting, and the trouble and attention necessary in moving and turning it over, there can be no doubt by burying it you save a great deal of time and trouble, and get an increased quantity of nutriment than by leaving it subject to the action of the sun and air.

It has been a question among horticulturists, whether vegetable matter in its green state or when on the decline, yields the most nutriment. The latter opinion appears to be the most reasonable. The vegetable in its perfect green state is liable to rot somewhat quicker, but it is likewise more subject to gaseous evaporation; whereas in its incipient stages of decay its juices were predisposed to the course of nature, and consequently none or very little of the matter is subject to gaseous waste. From the necessity of the case, however, in pursuing the above plan of manuring, a great deal of vegetable manure, grass, weeds, &c. must be buried in their green state, that the stock of garden vegetables may be kept neat and clean. A garden well manured in this way, it is thought, may not only be kept up, but enriched by this mode of managing it. A spring and summer crop of vegetables may be supplied in this way. Each will leave behind it a sufficient quantity of refuse nourishment to support the succeeding one. To market gardeners, this way of manuring would be of inestimable value. F.

HORTICULTURAL.—The Messrs. Winships exhibited at the Horticultural Rooms, Boston, on Saturday, two branches of the *Shepherdia argentea*.—Missouri silver-leaf, or Buffalo-berry tree, which attracted considerable attention. The plant from which these branches were taken is now growing in their garden at Brighton. It is sixteen feet high; every part of it is filled with fruit, and exhibits a splendid appearance. The tree is of a pyramidal form, the lower branches resting on the ground. This tree is called by the Indians rabbit-berry, and beef-suet tree. The French traders used to call it *Graisie de Buffle*, or Buffalo fat.

(From the National Gazette.)

BARTRAM GARDENS, NEAR PHILADELPHIA.

Within the few days past, we have paid a visit to the unrivalled *Bartram Garden*. Its aspect now is exceedingly rich. The innumerable grapevines are laden with fine fruit, the larger part of which has taken the deep purple hue; and the thick foliage of the great variety of trees is beautifully diversified by the tints of autumn. During the summer, Colonel Carr has made considerable additions to his stock of plants and flowers, which is altogether unrivalled in the United States. He possesses upwards of one hundred and seventy sorts of dahlias, that are all in flower—a spectacle which alone is not only worth seeing, but “worth going to see.” This morning he reopened his depot at the Arcade, where he has placed splendid specimens of these dahlias. It may be stated, without exaggeration, that at least ten thousand persons—all of respectable exterior and deportment,—have visited the Bartram Garden in the course of the summer; and of these the proportion of strangers was much more considerable than in any antecedent season. Indeed, the botanical collections, the display of shrubbery, the extensive avenues, the vineyards, the picturesque scenery, the theatre of the labors and repose of the two eminent botanists, the Bartrams, form a rare combination of attractions, which, we might suppose, would draw even a more numerous body of the curious, and which, certainly, should be deemed by every traveller a principal object of attention.

(From the Archives of Useful Knowledge.)

ON AMERICAN OPIUM.

The following is an abstract of the various attempts at making opium in the United States.

Dr. S. Rickeston, formerly of Dutchess county, New York, but now of the city of New York, cultivated the poppy in the year 1788, and found that the opium produced from it was quite as powerful as that imported. His paper first appeared in the “*American Magazine*,” published at New York, in 1788; and was reprinted in the *Medical Repository*, vol. 1, p. 430. In the third volume of the same work, p. 206, Dr. R. published additional experiments on the same subject. Those varieties of the poppy should be chosen, having numerous heads and strong stalks.—Dr. R. found such a variety with large red or purple flowers, that proved much superior to all others he had seen; he tried the Asiatic mode of tapping the heads, and found that they yielded most plentifully from eight to twelve days after the flowers had fallen; he however obtained the largest quantity of juice by cutting off the stalks, when the sun shines, about an inch below the flowers of the plant; and as soon as the juice appeared, by collecting it with a small scoop or penknife. After the juice ceased to flow, he cut it about an inch lower, and thus proceeded until the juice ceased to appear.*

The seeds may be sown at the distance of six or eight inches. He is convinced there is no difference in the quality of the produce, whatever variety or species be cultivated.

Dr. Anthony, of Petersburg, Georgia, in the month of January, 1810, sowed seed of the true white or opium poppy, which came up in due time. The second day after the petals had fallen, he divided the exterior coat of the head in four places, at equal distance from each other; more incisions, he thinks, would tend to wound and destroy the head unnecessarily. The incisions were made at ten o'clock in the morning, and at twelve he collected the opium that hung therefrom, in tears from one inch to an inch and a half in length. Another bleeding, in the afternoon of the same day, yielded as much as was obtained in the morning. He carefully avoided pene-

* The careful country practitioner, who may raise opium in the above ways, should try the effects of the two kinds.

trating the cavity of the head. Every head made from sixteen to forty grains of opium; and they would have yielded more, could he have attended closely to the plants. A piece of ground, six yards by ten, produced more than half a pound of opium. He sowed the seeds at the distance of eight or ten inches apart, in drills, and about three quarters of an inch deep: the drills were two feet apart. He thinks it necessary to sow the seeds in moist ground. Many of the full blown flowers measured from seven and a half to eight inches in width: the heads measured from two and a half to three and a half inches diameter.*

Dr. Spaulding of Portsmouth, N. H. has also made opium from the white poppy; samples of which he presented to the Medical Society of the Eastern District of New Hampshire: he procured it by incisions in the heads, after the capsules were fully formed.

The seeds should be sown in good ground, as early in the season, as the different parts of the continent, will admit; the plants must be properly watered, and kept clear of weeds. *Transplanting does not succeed.*

The poppy plant has been cultivated extensively by Mr. Ball and Mr. Jones, in England; both of whom have received premiums from the society for the encouragement of arts, agriculture, &c. The opium produced by them, was found by the London physicians, whose certificates are given, to be fully equal to the imported drug. For the statements of Mr. Ball and Mr. Jones, see *Transactions Society Arts*, vol. 18, and *Medical Repository*, vol. 1, p. 424; see also *Domestic Encyclopedia*, article "poppy."

The cultivation of the poppy plant, for the purpose of making opium, is particularly adapted to the southern states. Opium might form one of the articles that must be substituted for cotton, now that it is found much more of it is raised in the world than is required. But it is not likely that the lint will be taken; although the profit would be certain, if not great. Every physician in the United States living in the country, might make all the opium he used, by raising the poppy: an employment that would not only prove amusing, but highly profitable to him.

Mr. Ball calculated, that supposing one poppy plant growing on one foot square of earth, produced one grain of opium; more than fifty pounds will be collected from one statute acre: but one produces from three to ten heads, and in each head from six to ten incisions are made; from each of which he took two or three grains:—what then, he asks, must be the produce? Double, or semi-double poppies, gave more than twice the quantity produced by a single.

(From the Louisiana Journal)

DISEASE IN HORSES, CATTLE, &c.

A disease very destructive to horses, cattle and hogs is now prevailing in the lower part of Baton Rouge, and the adjoining parish of Livingston. It first appears by swelling, which is not confined to any particular part, but generally under the joints of the head and neck, and between the fore legs. In many cases the animal dies as soon as the swelling appears. Some live twenty-four hours longer, and some have been cured by the use of medicines, the first application of which was made even after one day from the first attack. We have not heard a name for the disease. The swelled parts on being opened, before or after the animal is dead, discharge a slimy, yellowish fluid. In some cases the discharge is white. The only remedies we have heard of being used are bleeding, calomel, and after calomel, active purgatives. Horses are first bled to the quantity of a gallon, or gallon and a half; about an ounce of calomel, mixed with bread or any other convenient article to form a bolus, is next

administered, and after a lapse of two or three hours, some active purgatives are given. The animal is said to be out of danger as soon as the bowels are loosened. We have not heard of any mode of treatment for either cattle or hogs. Some cattle on being opened were found to have the gall bladder very much enlarged.

Several farmers have lost all their horses; some as many as six or eight. It is the opinion of some that the hogs take the disease from feeding on cattle that have died of it.

The above we have learned from persons who have lost stock by the disease. We would be obliged if any of our friends would furnish us with something in detail in relation to the disease and the best mode of treating it.

(From the Maine Farmer.)

BURDOCK ROOTS FOR HOGS.

We were told the other day by a friend, that the roots of the common burdock are eaten with great avidity by hogs.

He states that he has put an ear of corn by the side of one of these roots, and the hog seized upon the root first, and would not touch the corn until the root was entirely devoured. If all hogs are as fond of it as were these, this troublesome plant will gain in reputation.

It already has much honor in the domestic practice. Its leaves being excellent in some cases of sickness, and its seed digested in gin is a good remedy in rheumatism. Its burs are famous for getting into the wool of sheep, and making the good housewife scold when she manufactures it.

Hogs are also very fond of the common *knot grass*, (*Polygonum aviculare*, L.) which grows about neglected places, door yards, &c.; and it would be well to grub it up and put it to a good use, by converting it to pork.

(From Goodsell's Genesee Farmer.)

AGRICULTURE IN OHIO.

Champaign county, Ohio, Aug. 1833.

It will be observed by every intelligent farmer who travels through the Western Country, that we have not yet attained a very great degree of perfection in the arts of agriculture. It is but a short period since our whole State was covered with a dense, and almost impenetrable forest. The farmers are therefore mostly new, and the soil very productive. But it will be observed, that those which have been used for several years, begin to show evident signs of degeneration.

The farmer of the Eastern and middle States, who has from neglect, or mismanagement, or other causes, suffered his soil to become exhausted and worn out, and therefore incapable of yielding an adequate support for his family, finds a refuge in Ohio, where the land is new, fertile, and cheap. Here several years are lost in clearing away the trees and preparing a small cabin or "log house" for the accommodation of his family. He then adopts his old system of farming, and the result is that his new and rich land soon becomes old and worn out. In a very few years he begins again to think of moving to the new country, and in Indiana he goes through a similar routine, and with a similar result. There are many exceptions to the above remarks in all parts of the State; and it would be an unpardonable neglect not to state that there are many agriculturists in Ohio, who conduct their operations on the most correct principles. There is another motive which induces many of the citizens of this state to emigrate to the new country. They were among the first settlers of the country, and like our great pioneer, Daniel Boone, have formed such an attachment to the hunter's life, that they really look upon the rapid settlement of the state with much regret—because it destroys the game!

The first great defect in the management of farms in the West, which will strike every one, is the *almost total neglect of manure*. "When my land needs manure," says one, "I will sell it and remove to the new country," and it appears to be the general impression that it is better to clear new land than to cart manure on to that which is old. Every barn yard is covered with manure to the depth, in many cases, of five or six feet, preventing the free use of the building which is sometimes removed on this account. There are some farms along the bottoms of the larger streams, which are annually overflowed with water. This occasions a thin deposit of rich alluvial soil, and renders manure unnecessary. There are fields along the *South bottoms* which have produced crops of Indian corn for 30 years in succession, without, in any sensible degree, diminishing the value of the soil. But when this is attempted on land differently situated, the effect is soon discovered.

Another very important defect, is the *want of a proper rotation in crops*. Nothing of this kind is to be seen, except the alternation of wheat and corn. No clover, buckwheat, or other ameliorating crop, is introduced to restore to the soil that nourishment which is taken from it by the wheat and corn. Wheat is frequently sown in the fall before the corn is removed from the fields.

The bad consequence of this system will be felt not only by the present occupiers of the soil, but also by many future generations. It is an evil which every true friend to his country should endeavor to prevent. It is a proper subject for legislative interference; for what can be of greater importance to a country than the preservation of its soil? The legislature of this state appears to be convinced of its importance, and at its late session passed an act providing for the establishment of an agricultural society in every county. In many counties the requisite number of persons (twenty) did not attend, and consequently no society was formed. In others the subject was taken up with so little spirit that not much good is expected from them.

The only method which will prove effectual is believed to be this—the *diffusion of useful knowledge*. To furnish every farmer with the means of obtaining a correct knowledge of the principles useful in agriculture, should be the object of the legislature, of agricultural papers. They should endeavor to remove that prejudice, which so generally prevails against reading agricultural books. "I reckon I know as much about farming as the printers do," say they, and therefore they refuse to profit by any thing that is printed. Let the farmers of Ohio know what has been done and is now a doing by their brethren of the old country. Show them what an Englishman can do on his rood of land—what the Yankee can do on his small farm, and they will be convinced that it is possible for them at least to live in a country no older than Ohio.

Your numerous correspondents will render an essential service to this cause by furnishing a list of those agricultural books which they have found to be useful. It is well known that there are many books of this kind which are of but little value, owing to their local nature, or to their intrinsic worthlessness; and it is important for the farmers to know what are worthy of his attention and what not. By publishing such a list with the opinions of practical men concerning each book you would be the means of saving much time and expense in reading and purchasing books of little value. L.

An ewe, the property of Mr. Guy, a farmer in the parish of Lantegloss, died a few days ago at the advanced age of 13 years. She had given birth to 22 lambs at nine double and four single births; and being a great favorite, he had determined to preserve her life as long as possible.—*Cornubian, Eng.*

* Philadelphia Medical Museum, Hexade 2d, vol. 1, p. 142.

† Medical Repository, Hexade 3d, vol. 1, p. 193.

Prices Current in New York, August 31.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .15½ a 18½; Upland, .14½ a 17; Alabama, .15 a 17½. Cotton Bagging, Hemp, yd., .13 a .21½; Flax, .11 a .15. Flax, American, 20 a — Flaxseed, 7 bushels clean, 15.00 a 15.25; rough, 13.00 a —. Flour, N. York, bbl. 5.50 a —; Canal, 5.41 a 5.62; Bait. How'd st. 6.00 a 6.25; Rhd city mills, — a —; country, 5.75 a 5.87; Alexandria, 5.75 a 5.87; Fredericksburg, 5.75 a —; Petersburg, 5.75 a —; Rye flour, 3.62 a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —; Grain, Wheat, North, 1.12 a 1.16; Vir. 1.15 a 1.23; Rye, North, .75 a .76; Corn, Yel. North, .75 a .76. Barley, — a —; Oats, South and North, .34 a .35; Peas, white, dry, 7 bu. — a —; Beans, 7 bu. 8.00 a 8.50; Potatoes, Beef, mess, 10.75 a —; prime, 6.44 a 6.55; cargo, — a —; Pork, mess, bbl. 15.50 a 15.75, prime, 11.50 a 11.75; Lard, 9 a .104.

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:
One full blood bull, one year old last spring—a very fine animal. Price \$200.
One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.
One Bull, seventeen months old from good stock, seven-eighths Durham. Price \$175.

One do. twelve months old, a fine Bolivar Calf, seven-eighths Durham. Price \$150.

One do. fifteen months old, three-fourths Durham, has all the appearance of a thoroughbred animal. Price \$150.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

I. I. HITCHCOCK.
Amer. Far. Establishment.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The New Pine, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2.00 per hundred.

EARLY SCARLET, LATE BOURBON PINE, and LARGE EARLY SCARLET, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, Downton, Grove End Scarlet, Bath Scarlet, Duke of Kent's Scarlet, Raspberry Hautbois, New Fluck Musk Hautbois, Wilmot Superb, Keene's Imperial, Keene's Large Scarlet, 50 cts. per dozen.

MELON, METHVEN CASTLE, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

I. I. HITCHCOCK,
American Farmer Establishment.

RHUBARB PLANTS.

I have also for sale RHUBARB PLANTS, for tarts.—Price, for year old plants, 12½ cents each—for two year old or upwards, 25 cents each.

Also, SEAKALE PLANTS, 25 cents each.

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or overbearing Alpine Strawberry, without runners, BOTH RED AND WHITE, may be had at the American Farmer Establishment.—Price \$1 per dozen.

POINTER DOGS.

Two full blood Pointer Puppies, ready for delivery, for sale at \$10 each, by I. I. HITCHCOCK, Aug. 30. Amer. Farmer Establishment.

DEVON CATTLE.

For sale, the following fine animals, all of the pure North Devon Blood.

Bull Othello, four years old in May last, Price \$150.
Cows, Rosebud and Volante, each three years old, Price, of each, \$100.

Heifers, Daphne, Sylph and Celeste, two years old last spring, and in calf by Othello, Price, of each, \$75.
Bull calf, Dash, one month old, Price \$50.

If several of these are taken together, some deduction will be made in their prices. They are all excellent animals. Inquire of I. I. HITCHCOCK, American Farmer Establishment.

DURHAM SHORTHORN BULL.

For sale the improved Durham Shorthorn Bull *Horatio*.

Horatio was calved May 10, 1831. Sired by the celebrated *Bolivar*, out of the imported cow *Kemp*, both purchased from Mr. Powell, at high prices. A full pedigree will be furnished to the purchaser. Price \$250. Inquire of I. I. HITCHCOCK.

TALAVERA WHITE WHEAT.

[See No. 21 of this vol.—August d.]

A few bushels of this superior wheat, perfectly clean, for seed, may be had at the American Farmer Establishment, at \$2, if immediately applied for, to I. I. HITCHCOCK.

ORCHARD GRASS SEED

I shall receive in a few days, a small quantity of Orchard Grass Seed, of this year's growth, represented by the grower, as very good; price \$3.

I. I. HITCHCOCK,
American Farmer Establishment.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Burland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shafts, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

Aug. 23.

J. S. EASTMAN.

STRAWBERRY PLANTS.

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are:—large early Scarlet, Pine Apple, Faulkner's Scarlet Pine, Downton, Lima, Wilmot's Superb, Roseberry, English Red Hautbois, Black Musk do. French Alpine, White and Red Monthly, &c. Price \$1.50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.
40 lbs. summer and winter SPINACH.
100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2.50 per lb.
100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year)

Early greys or Scotch KAIL, Brussels SPROUTS, &c.

Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,
Aug. 23. Corner Light and Pratt st.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is very little variation in the prices of flour and grain. The wagon price of Howard street flour continues at \$5.00 without variation. Much of the flour that comes in, proves inferior, and is marked *fine*. In grain the business is steady, and the prices without much change.

TALLOW.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 2.00.—Crop, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 6.00 a 20.00.—1 line yellow, 18.00 a 25.00.—Virginia 4.00 a — Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 524 hhd. Md.; 214 hhd. Ohio, and 2 hhd. Kentucky.—total 740 hhd.

Flour—best white wheat family \$6.75 a 7.25; super Howard-street, 6.12½ a 6.25; city mills, 6.00 a — city mills extra 6.25 a —; Corn Meal bbl 3.62½; Grain, new red wheat 1.14 a 1.16; white do 1.17 a 1.23;—Corn, white 62 a 63, yellow, 63 a 64;—Rye, 60 a —; Oats, 28 a 31—Beans, 75 a 80—Peas, 65 a 70—Clover-seed 9.00 a —; Timothy 3.50 a 4.00 Orchard Grass 3.00 a — Tall Meadow Oat Grass 2.25 a 2.50—Herd's 1.00 a — Lucerne — a 37½ lb.—Barley—Crushed 1.57 a 1.50—Cotton Va. — a —; Lou. — a —; Ala. — a —; Tenn. — a —; N. Car. — a —; Upland 16 a 18—Wm-key, hhd. 1.40 a 30½; in bbls 32 a 33—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40. Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do. 25 a 26; common, 25 a 26; Hemp, Russia, ton, \$150 a 175. Country dew-rotted, 6 a 7c lb. water-rotted, 7 a 8c.—Feathers, 38 a 40;—Plaster Paris, per ton, 4.12½ a —; ground 1.50 a —bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial; Wheat Crop in Maine; Exhibition of the Pennsylvania Horticultural Society; The Grater Cider Mill—Barnitz's Breed of Hogs—Foreign Markets—Experiments and Observations on the Fermentation of Manures—On the Improvement of Land in the State of Maryland, by Gov. Stevens; read before the Board of Agriculture for the Eastern Shore of Maryland—On the Application of Manure to Gardens, Improvements suggested in the manner of Growing and Manuring Strawberries—Shepherdia argentea, or Buffalo berry Tree, exhibited by Messrs. Winships—Notice of the Bartram Gardens, near Philadelphia—An Abstract of the Various Attempts at Making Opium in the United States—Diseases in Horses—Burdock Root for Hogs—On the State of Agriculture in Ohio—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL

Agricultural and Horticultural Establishment: COMPRISING.

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

— An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, SEPT. 13, 1833.

THE DROUGHT.—The severe drought with which this part of the country has been afflicted for two months past, has almost ruined the corn crop, as well as late potatoes and turnips. Indeed of the two latter, it is feared that very little can be expected from them. Turnips appear to be out of the question, unless we have a very favorable fall season, while potatoes must be very short. On Saturday night last we had a very fine shower of rain, but not enough to satisfy the thirsty earth. As "the spell is broken," however, we may now look for more, as "it never rains," they say, "but it pours."

SINCLAIR AND MOORE'S NURSERY.—A few days ago we took a day to ourselves for the purpose of a ramble in the country; and, as we had not been there for three years, we paid a visit to the nursery of Sinclair and Moore, situated about three miles from the city, between the Bellair and Philadelphia roads. The great improvements effected by the industrious and persevering proprietors, in the short time that has elapsed since they commenced the nursery at its present location, is highly creditable to them. Indeed, we did not expect that so much could be done by the means employed on this place. The nursery now contains a large assortment of all the fruit trees generally cultivated, in fine health and of vigorous growth, all selected by Robert Sinclair, the senior partner of the concern, and propagated and cultivated under his immediate superintendence. Of a large nursery of peach trees, containing about ten thousand saleable plants, we did not discover a single diseased tree, and not more than ten, if that, injured by the worm. This part of the nursery is, indeed, a beautiful sight. The collection of apple, pear, plum, cherry, apricot, and nectarine trees, is also very extensive, and in equally good condition. The varieties of each of the kinds of fruits, are sufficiently extensive for all purposes; and it seems to have been the object of the proprietors to collect all the *good fruit*, whatever its name might be, and to exclude all that has not been approved. They do not seem desirous of making up a *long list*; but rather a *ri h* one. We, therefore, found the names of all favorite apples, peaches, and other fruits, on the nursery tallies; and a great many new European kinds that we were not before aware of. The grounds were clean and well worked, and in this respect the whole establishment, (an extensive farm, and garden for raising garden and flower seeds, included,) are highly creditable to Mr. Sinclair. We were particularly pleased with the grape department, and had our opinion of the Catawba, very much improved. Mr. Sinclair considers them the best, under all circumstances, for cultivation here; and, although we do not agree with him fully on this point, we were much better pleased with them than before our visit. Mr. Sinclair has a considerable vineyard of them, all young vines, now in the second or third year of bearing, and the fruit at the present time in high perfection. Several other kinds are also in bearing, and among them our favorite, the *Herbemont madeira*, as well as the *Isabella*, the *Bland's madeira*, and several foreign varieties, particularly the red *Frontignac*, which we had an opportunity of tasting. Besides the useful, the collection of ornamental trees is pretty extensive, comprising fine plants of all kinds of ornamental trees and shrubs in general esteem, as well as a goodly number of the more rare. The beautiful silver leaved *abele*, the *ailanthus*, or tree of Heaven, and a great variety of other deciduous trees, as well as a fine collection of evergreens, attracted our attention. The collection of herbaceous plants is also pretty good. In fine, we think we may safely say, that the foundation is fairly laid for one of the most extensive and valuable nursery establishments in the Union.

The site and soil are admirably adapted to the purpose, and when we take the central situation of Baltimore into consideration, it may also claim the advantage of climate and locality in a pre-eminent degree.

We were pleased to learn that a green house upon a moderate scale is contemplated by the proprietors; one in which the really valuable tender plants can be propagated and kept. This will add to the interest of the concern materially, and we shall be glad to see it in operation.

FEAST'S GARDENS.—We have neglected for a long time noticing the establishments of the Messrs. Feasts, that of Samuel Feast situated at the west end of Franklin at the corner of Gilman street, and that of John Feast in Lexington street, a few squares west of the market. Samuel Feast has recently removed to his present location, and has one of the handsomest green houses in this country, well stored with a splendid collection of all the most valuable exotic and indigenous plants in cultivation. His heaths and camellias are scarcely surpassed in any nursery in the country. He has besides an extensive and valuable collection of fruit and ornamental trees and shrubs. The great improvements he has made in his establishment are highly creditable to his skill and industry. The establishment of Mr. John Feast also contains a splendid collection of exotic and indigenous plants, both hardy and green house. In these two establishments almost any plant of value may be obtained. They are really worthy of a visit to any one fond of flowers, or curious and rare plants.

CORN AND OATS.—Ripe Indian corn in bunches was gathered on the premises of Mr. Isaac Hill in this town, Aug. 7. This corn was planted in the month of May, about the same time as was a field of oats of about one and a half acre on land of Mr. Hill. These oats were reaped on the 16th and 17th of the present month—about ten days after the gathering of the corn. They were as fine a specimen of standing oats as the writer has ever seen—the largest he ever recollects that did not fall down before ripening. It is thought that somewhat less than one and a half acre will yield nearly one hundred bushels. The corn was from seed raised at Montpelier, Vt. the last year, it is of eight rows, and although smaller in the ear and stalk than the common twelve rowed corn raised here, it is thought will yield nearly as much to the acre. If this corn will come to maturity in the same time as will a crop of oats, it must be an object for farmers who cultivate corn on ground where the crop is endangered by early or late frosts, to procure the same early kind instead of the common kind for seed.—*N. H. Patriot.*

[The Editor of the American Farmer gathered the perfectly ripe corn of his very early variety, on the 2d of August. It was planted on the 25th of May. He believes it will yield a crop fully equal to that of any other kind, and it may always be gathered in seventy days from the time of planting.]

THE NORTON GRAPE.

We invite particular attention to the article below. This is unquestionably the most delicious grape we have ever eaten, and it is matter of surprise that it has attracted no more attention in Virginia, while its qualities are already well known and duly estimated at a distance. The enterprising discoverer, Dr. Norton, whose vineyard is a short distance from this city, has sunk money by his attempts to introduce the culture of the grape into this state. It is but fair that he should be remunerated. An opinion is very prevalent that the climate of Virginia is not adapted to the culture of the grape. This is all nonsense. The resemblance between it and that of the countries where it most flourishes, and the profusion of wild vines throughout the country, prove the contrary. The fact is, the efforts of most vintners have hitherto been directed to the culture of the foreign grape, which can

never succeed here like the native. And yet some of our native grapes, when properly cultivated, are surpassed by none in the world, and never fail (as is often the case with the foreign) in yielding a crop. The grape under consideration we understand is as certain as Indian corn or potatoes. The proprietor has some cuttings which he is willing to dispose of, and which we hope to see distributed throughout the state.—Virginia is naturally a grape growing country, and to that she must arrive at last.

NORTON'S VIRGINIA SEEDLING.

Vitis Norton, see Prince's Cat. 393, and his book on the Vine, page 186, for the following description of this fine fruit:

"This very distinct variety owes its origin to Dr. D. N. Norton, of Virginia. It was raised from the seed of the Bland, which fructified in the vicinity of the Meunier or Miller's Burgundy; there exists consequently, some probability, that it is a hybrid between the two. In appearance, the vine much resembles the form of the two, to which it closely assimilates in its foliage. The shoots are strong and vigorous, and of a red color. The vine resists the cold of the most severe winters, never failing to produce fruit, and that most profusely, thriving even without pruning, and requiring at most, but a partial use of the pruning instrument and almost equaling the Isabella in its rapid extension—like that vine it is also well calculated for arbors, bowers, large espaliers, &c. The fruit is of the darkest purple or black color, and ripens in September, but will remain on the vine with a great increase of saccharine principle (as is the case with the finest wine grapes of France) until the end of October, in this latitude, (New York,) and the last week of November in Virginia. The bunches are usually 8 or 9 inches long on the old and strong vines, and weigh about a quarter of a pound each; the berries begin to form a conical bunch on the stem at a distance of several inches from the place of its attachment to the wood; they are round, and a little flattened at the end, and about the size of the Meunier; the juice which they yield is of the richest quality; the skin is replete with a violet coloured matter, which imparts to the wine a shade equal to the Tinto Madeira, which last it resembles as well in the taste as appearance. For the purpose of making wine, this is hardly to be excelled by any foreign variety."

This vine thrives in any soil, but the richer the finer will be the fruit; it bears culture with the plough or hoe, as well as the Indian corn, and we may as confidently look for a return to our labor as from that article; it is not at all subject to mildew, rot, or any other casualty of the season, and the possession of this variety does away the necessity of farther experiment, as relates to foreign vines, combining all the excellencies we require, as well for the table as the press. I am confident that even the climate of England would yield the fruit in great perfection, and that the French cultivators would most willingly introduce it into their vineyards to the exclusion of many others they now possess. It is no doubt to become a national benefit, and will at no distant day, clothe with rich clusters, many of our fields, which for years past have remained barren and worthless. During the present unfavorable season, it maintains its character, and holds out to the farmer, a certainty that his fields would be far more productive to him in wine than in any other culture to which he can subject them. The originator of the vine, I understand, is willing to part with some thousands of the cuttings the approaching season, and I would recommend all who wish to venture in the culture of the grape, to possess themselves of so valuable a prize.—*Richmond Whig.*

PEACH STONES.—This is the season for preserving peach pits. They may be sown broadcast, or planted in drills, in autumn, and harrowed in, or covered to a very moderate depth.

AGRICULTURE.

(From the New England Farmer.)

THE CULTURE OF WHEAT.

Meadowbank, Deerfield, August 15, 1833.

MR. EDITOR:—In a communication on the blighting of wheat, I suggested that its cause was atmospheric; or, if you prefer it, meteorological; or to dispense with hard words, that it was owing to the particular character of the weather occurring at the time, when the wheat was in the precise condition to suffer from it.—Under these circumstances no human prudence can effectually guard against it, since it is utterly beyond our control or calculation.

I had then given no other attention to the subject than the observation of my own field, and that of some of my neighbors. Since that time, however, I have examined the best authorities in my library, and find my own suggestions confirmed by the opinions of some of the most eminent writers on agricultural subjects.

The principal diseases to which this valuable crop is subject, are smut, blight, mildew, and rust. Smut is a disorder very well understood. Of this there are two kinds; but, as a preventive of this disease has been ascertained, the farmer has only to complain of his own negligence, if he suffers from it. Of the other diseases, blight, mildew, or rust, they are not very nicely distinguished from each other; indeed, the terms are often indiscriminately applied to the same appearances or effects; and though by very acute and accurate observers, these terms will be distinctly and appropriately applied to three different conditions of the diseased plant, or, if you prefer it, to three different diseases of the wheat plant, yet as the specific distinctions of these diseases are not familiarly known, nor their particular causes investigated, and as the fatal results similar in all the cases, are much more important than the characteristic differences, we shall speak of the whole under the general term of blight.

I suggested that my wheat was struck with the fatal blast, when it was in the flower and the kernel was just forming; and the weather at the time extremely hot and sultry, with rain and sunshine intermingled, and the earth steaming most profusely under the intense heat. Now permit me to quote from Sir John Sinclair's General Report of the agriculture of Scotland, vol. i. 473, &c.

"Blight may perhaps be defined as an internal disease in the ear or spike of the wheat, either affecting all, or only a part of the florets, producing an entire or partial deficiency of seeds, or in a lesser state of the disease, rendering the grains small, shrivelled, and light. Blight is probably produced by heavy rains falling at the time the wheat is in flower, that is, when the anthers are protruded from the florets; and by which rains, the pollen *farina fecundans* or vivifying dust of the anthers is washed away before it has come to sufficient maturity to impregnate the styles leading to the ovaries or receptacles of the embryo grains of seeds.

"In 1808, 1809, and 1810, serious injury was suffered in many parts of Britain by disease, and consequent defalcation of the wheat crop, which consisted of a combination of the blight and mildew, and appeared to have been occasioned by the circumstances of the weather, mentioned above as productive of both." The following description of that complicated and destructive disease has been abstracted from answers made to queries proposed by Sir John Sinclair to an intelligent farmer. I quote only a part.

"From the best information I can procure, the mildew began to make its appearance on the straw and ears of the growing wheats, immediately subsequent to a heavy fog or mist, rising as it were out of the ground, about the 4th to the 10th July, 1808, and which was followed by much misty and rainy weather, attended by considerable heat and very little wind. The peculiar fog or mist, above alluded to, is called ground rook, in some parts of Scotland, and

strongly resembles a thick smoke, which appears to rise from the surface of the earth." This is peculiarly the weather, which I meant to describe.

Then again in his Husbandry of Scotland, vol. ii. p. 124. Appendix, in an essay by Sir John Sinclair himself, on this very subject, in which he gives, as he says, the results of a very extensive inquiry made towards the end of August, and the beginning of September, 1808, into the nature and causes of these distempers, at which time blight, rust or mildew, had affected the crops of many of the most productive districts, both in England and Scotland, he mentions, "that a respectable friend of his (Geo. Dempster, Esq. of Dunnichen) informs me, that his wheat turned out a miserable parcel of shrivelled stuff, neither injured by the mildew or smut, but that its bad state is to be entirely imputed to heavy rains, when in flower by which it was laid." "According to Dehamel, the rust is owing to dry *glomy* weather happening when the corn is at the height of its vegetation.—Tull observes, that the rays of the sun are necessary for keeping the wheat healthy and strong, as it is doubtless the native of a hot country. Any thing, therefore, that interrupts the rays of the sun, must be injurious to that grain. And in America the mildew is attributed to the fogs and heavy dews, which come on as the season advances.—Sometimes the fogs and mists are so close and thick, that the air seems in some degree to have lost its elastic powers, so that neither animals nor vegetables can endure it." I quote here authorities to show how strongly they attribute these diseases of wheat to an atmospheric influence.

I return again to the account of the extent of this injury to the wheat crops in Great Britain, given by the same intelligent writer, quoted first from the General Report of the Agriculture of Scotland, a distinct work from Sinclair's Husbandry of Scotland. "After this appearance of mildew, the wheat crop was much lodged by heavy rains about the beginning of August; and in several instances the straw had become so tender by the effect of the disease that it burst open in bending under the weight of the rain. By this, entire fields were destroyed, so as not to contain a single grain of wheat in the ears, and the straw became utterly unfit for fodder. In such cases, whole fields that promised ample crops, were mown and led into the fold-yard as bottoming to the dung-hills; while others were dried like hay, and built up in stacks, to bed the fold-yards, feeding sheds, and stables, as wanted. In one instance, in Northumberland, a removing tenant absolutely refused to reap and remove his last crop of wheat, which was utterly useless to him, but might serve his successor, to convert into muck, and he was found not liable to the charge, which would have been for the sole benefit of another person. In other cases where the plants remained alive and unbroken, the injury was not so entire, yet sufficiently distressing, by the diminution of the quantity of produce, and the deterioration of the quality of the grain, which remained. This varied in different proportions according to circumstances. Crops that were estimated at the beginning of July to produce forty bushels of good wheat from each acre, were valued at harvest to give six, ten, twelve, or up to twenty bushels of very inferior grain, some of which did not command the price of inferior oats; and many farmers accordingly gave their bad wheat to their work horses and sold their oats. The whole of the injury was not attributable to mildew, but proceeded from the concurrence of two other causes; a blight in the ear, occasioned by heavy showers of rain, while the wheats were in full flower, by which the pollen was washed away, and prevented from fecundating the florets. This idea is strengthened by the circumstance of the upper florets of the ears, and very often the whole of one side of the head, being generally barren. In consequence of a great deal of the crop having been lodged by heavy rain at the beginning of August, the grain produce when impregnated, became *stoomy*, or small, shrivelled, and ill filled. Both

of these causes are known to injure grain crops materially, in years when the mildew has not been noticed."

"No discrimination of soils could be pointed out, as more or less affected by the disease. It attacked the crops of wheat on strong as well as on free soils; and the only observable difference was, that high, open, free airy situations were comparatively less diseased, while low grounds, much sheltered by high hedges, hedge row trees, and plantations, and situations near rivers, were obviously and considerably more materially injured. The near neighborhood of the sea seemed to have a beneficial influence in preventing or lessening the disease. Much of the wheat crop in various soils and situations was comparatively exempted; or so little injured as to give an abundant produce, and of good quality. But no circumstances occurred that could throw any light on the causes of this difference, at least in a practical view of the subject, so as to point out any means of preventing or even lessening the evil on any future opportunity."

¶ Upon the whole the writer concludes "this complicated disease, by which such serious injury is caused to farmers and the public, appears to have been occasioned by the unfavorable state of the weather at the time of flowering, combined with a continuance of unfavorable weather, during the after progress of the wheat in filling and ripening, and to be utterly unsusceptible of any preventive, precautionary, or curative attempts by any human efforts."

Now the situation of my own wheat crop, which I this year lost by blight, was precisely such an one as that described above as peculiarly exposed to injury. It was on an alluvial meadow; near a river, surrounded by hills on three sides, and subject to copious exhalations from the stream. The two blasted crops in my neighborhood, referred to in my former communication, were similarly situated. The rankness of the growth of my wheat, and the fact that some portion of it was lodged, no doubt contributed to create a predisposition or liability to the disease. But it was obviously affected by all the local and temporary causes above referred to; and to them, and not to any particular condition of the soil, to the superabundance or deficiency of any particular ingredients in the soil, its blight, in my opinion, is to be attributed.

As the subject is of great importance, I beg leave to mention other authority in relation to it, and when I refer to John Brown, of Mankie, it will be understood by those competent to judge, that for science in agriculture and practical knowledge and experience, no higher authority can be quoted.

In his treatise on Rural Affairs, vol. ii. p. 24, &c. he says, "whether blight and mildew are considered separately, or viewed as one and the same disorder, appearing in different periods of the plant's growth, we are convinced that both may with truth be reckoned to proceed from an unhealthy atmosphere, when the crop is in certain stages of its progress to maturity." "Some soils are naturally so moist at bottom, that dampness issues from them at all times. Superior culture and excessive manuring are apt to cause a crop to be early lodged; in which case one disease or other is sure to seize upon it, and a southern aspect, and every confined situation, are much more hazardous than those of a northern or western exposure, and where the air has free egress. In a word, when hoar frost or vapor of any kind is dispelled by wind, no danger will follow to the crop, but wherever a hot sun is the agent, we have repeatedly noticed the most serious losses."

"The opinions already expressed respecting the diseases of wheat receive considerable support from what happened with crops 1807 and 1809. That mildew acted, in numerous instances, as the destroying agent of crop 1808, is universally acknowledged; but that the defectiveness of that crop was entirely owing to mildew may safely be questioned. ¶ In fact the chief injury proceeded from an unhealthy or pestilential atmosphere, at the time when the grain was in an

embryo or imperfect state. Owing to that unhealthiness something like abortion seemed to take place in the parent plant, after the focus of the young grain was formed, as was evident from more than one half of the cups or vessels, prepared by nature for its reception, being totally void of substance, notwithstanding that every part of the ear had blossomed equally well, and promised to furnish a numerous and healthy progeny."

"It shall now be inquired, how this abortion was brought about, which we have stated as so destructive to the wheat crop of 1838. This may be satisfactorily elucidated by a reference to the weather, which prevailed through the months of July and August, as it is in these months that the diseases of wheat always appear, that of smut excepted, which is not generated by an unhealthy atmosphere. The month of July was excessively warm, more so than remembered by the oldest man living; and from the beginning to the 20th of the month, the slightest moisture was not perceivable. Owing to this uncommon heat, wheat plants upon all soils not composed of clay or strong loam, were, in a manner, at a stand with respect to growth, being enfeebled by the fierce rays of the sun, while any wind that blew was so sultry, that the evil was rather increased by its effects. The ground in consequence of this intense sunshine, felt something like burnt brick when taken from the kiln; of course when the rains fell, smoke issued from the surface, something like what proceeds from lime-shells when water is thrown upon them; and this exhalation of vapor, continued in a greater or less degree, till the soil was saturated with moisture, when the air became cooler and more temperate. Under these circumstances it was not to be expected that the wheat crop could escape from the danger with which it was encompassed. Apprehensions, therefore, were entertained that the fields, already in a sickly and declining state, would soon fall victims to the pestilence, which raged in the atmosphere; and the result soon showed that these apprehensions were too well founded. With the exception of the lands upon the sea shore, preserved we presume by refreshing breezes from the sea, every field was discovered to be more or less injured."

I have no disposition, Mr. Editor, to establish or controvert any particular theory. The subject is of the last importance to the agricultural community. It is from this consideration that I have given you the results of my own limited experience; and the far more valuable opinions of the distinguished, scientific, and practical farmers quoted above. Other facts already in my possession and which I am taking means to obtain in relation to this important culture, if thought likely to throw light upon the subject, shall be placed at your disposal. H. C.

(From the Southern Agriculturist.)

ACCOUNT OF AN AGRICULTURAL EXCURSION,
Made into the South of Georgia in the winter of 1832.

BY THE EDITOR.

(Continued from page 179.)

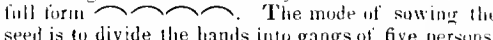
In our last number, we gave the course of culture pursued at "Hopeton" with rice. The next crop in the order of rotation, which Mr. Cooper has adopted, is cotton, and we subjoin his mode of culture as detailed by himself, in the notes he kindly furnished us.

COTTON CROP.

"Preparation of the Land.—When the land has been sufficiently long under cultivation to admit of ploughing, a furrow is run down the centre of the old alley, all the vegetable matter is placed in it and two furrows thrown over it. This is done early in the winter that the frost may break down the soil which is generally a stiff loam, and that the vegetable matter may consolidate and undergo a partial decomposition by spring. Manure from whatever source obtain-

ed is applied in this way. Rice straw, and cane-trash form the principal supply. When the soil is very stiff, the land is flush ploughed and cross ploughed during the winter, in order to pulverize it.

"Water ploughing and half bedding have been found the best preservatives against the cut-worms, which are extremely destructive to the young cotton on new river lands.

"A short time before planting, the beds are completed by running the plough again, throwing up two additional furrows, and by a third furrow forming a water channel between the beds. The beds are then dressed by the hoe and are ready for the seed. On new lands the beds are six feet from centre to centre, and on those which are reduced so as to produce an average growth of six feet—five feet. The beds are as large as can conveniently be made, and are of a full form . The mode of sowing the seed is to divide the lands into gangs of five persons: the first, by a range of stakes, chops out the alternate holes; the second, chops out the intermediate holes; the third, sows the seed, while the fourth and fifth cover the seeds. The chops are made ten inches wide and extend twelve inches across the beds. A large quantity of seed well scattered, is sown, and covered from half to an inch deep. By this mode of planting, as much work can be done as by any other, and the distances between the plants accurately fixed. The distances between the plants vary according to the strength of the soil from fifteen inches to four feet. On recently cleared land, open planting is the only mode of ensuring early maturity. As a general rule, we deem it safest to plant thick on worn lands producing a growth of four to five feet, and very open on those of exuberant fertility, where the cotton averages from seven to ten feet.

"When the lands are very strong, I prefer planting a mixed crop of cotton and corn. The mode is to plant two rows or beds in cotton, and one in corn, or every third row in corn alone,

Cotton Cotton Corn Cotton Cotton Cotton Cotton Cotton.

The cotton three to three and a half feet from stalk to stalk, the corn single stalks eighteen inches apart. The object is, from the middle of July to November, to expose one side of each row of cotton to the free influence of sun and air. As the corn is turned down about the middle of July, this is accomplished. The corn should be planted very early. If the lands are strong the cotton branches will nearly interlock. This combination of crops may be strongly recommended on very rich lands. And were I to plant two-thirds of cotton and one-third of corn, I would always combine them.

"Experiments continued for three years on a large scale, gave an average *per acre* of 190 to 200 pounds of cotton, and from 14 to 18 bushels of corn, exceeding the proportion of either crop, had they been planted alone. The reasons for this superiority will readily occur in the different habits of the plants, and the freer influence of light and air which each experiences from their combination. The corn may, perhaps, with advantage, be planted thicker.

Every third row in corn is preferred to the alternate one: as by the latter the cotton is too much shaded in its earlier growth by the corn. By placing the corn, the subsequent year, on the beds on which the cotton was the previous year, a partial rotation of crop is effected.

"It will be perceived that this mode bears no similarity to the plan sometimes followed, of scattering corn among solid cotton.

"The thinning is commenced by opening the centres of the plantings, by taking out a handful of the plants, as soon as they begin to put out the fifth leaf, including the seed leaves. As soon as the plants crowd each other they are again thinned out to about seven. A third thinning is given when the plants close the spaces between them, and the number is reduced to three or four. At this time a little earth is

drawn among the plants to support them. When six or eight inches high they are thinned down to two plants, and when between fifteen or eighteen inches high to a single stock. The rule is never to allow the plants to crowd each other so as to produce a spindling growth, but at the same time to leave a sufficient number to guard against accidents from slight frosts, cut-worms, and high winds.

"Time of planting 20th of March to 10th of April; earlier than the first date exposes the young plants to late frosts: later than the latter throws the sowing into the dry period of the spring.

"The hoeings are repeated once a fortnight from the period when the seed comes up, and are always up, and except the first deep. After the first hoeing, which is superficial, the beds are hauled up—adding to the sides, and but slightly to the tops of them. In performing this operation, care is taken to avoid making sharp and high beds. We wish full beds with a deep sharp furrow for the water between them—the object sought is a large body of friable, well drained, but moist soil—(our soil is all strong and low.) On clay lands, I find it very important to keep the surface of the ground friable and open, by hoeing, without reference to the destruction of grass; the oftener this operation is performed the better, and it should be from one to two inches deep. The hoeings should be discontinued about the end of June to the middle of July; as their repetition after that period, by keeping up a new growth, retards maturation. We seek, by diligent cultivation, to hasten the growth during the spring and early summer months, and when the plant has reached a productive size, by discontinuing the stimulus, to hasten maturity. As our means of accomplishing this—about the middle of August the extreme shoots are nipped off, or as it is technically called, the plants are topped. During the months of August and September, the suckers which appear, are removed when from three to six inches long. This operation completes the cultivation. The supposed advantages of topping are earlier maturity, larger boll, the direction of the sap into the lateral branches which are more fruitful, and less dropping—disadvantage, increase of suckers. The removal of suckers is indicated by the propriety of destroying a new and useless growth, which, by withdrawing the sap from the old branches and fruit, retards their maturity, and frequently occasions them to cast the old fruit.

"The dropping or casting of the bolls appears to be owing to any sudden change in the habit of the plant; whether it passes from extreme drought to extreme wet, and *vice versa*, or receives some new stimulus by stirring the ground, or by the recent application of manure.

"Plants growing on the edges of ponds always full of water, do not cast their fruit, however dry the season may have been, and however wet it may be. Those growing on the margins of banks, which send their roots into the base of the banks, are also less subject to crop their bolls.

"I once planted a small section of a margin from which the stiff and poor clay from a new ditch had been spread out, *overlying* the soil from four to six inches; the roots passed through the poor crust and extended into the rich soil below, and were thus placed beyond the vicissitudes of the seasons. These plants during a season when there was an unusual quantity of dropping, shed nothing.

"The oftener the fields are hoed the less dropping there is, because the stimulus is so frequently repeated as to keep up a regular and continued growth.

"The deeper and the finer the tilth of the soil, the less the dropping, because the lower roots supply an equal amount of nourishment to the plant; and a portion of them are always in moist ground. Lands which are deeply stirred, and well drained, drop less than those, which are thin and liable to be overflowed.

"A hoeing immediately after a rain occasions dropping of leaves as well as bolls. This is in a great

measure owing to the double stimulus from moisture and stirring.

"The practical instruction from these facts points to the propriety.

"1st. Of repeating the hoeing as frequently as possible; perhaps applied to one-half of the bed at a time, and made deep.

"2d. Drawing deeply.

"3d. Deep and frequent ploughing.

"4th. Diffusing the manure through the soil, that the plant at any stage of its growth may receive a portion of it.

"The pickings vary from an average of from forty to sixty pounds to the hand, according to the blow in the field.

"The average crop of the last six years has been one hundred and fifty three pounds to the acre; during that time one crop was almost entirely destroyed by hail.—Excluding that year, the average has been one hundred and seventy-seven pounds. Three of the crops have averaged more than two hundred pounds.

"The preparation for market consists of assorting, ginning by Eave's horse-gin, passing through a whipper after ginning and moting. The gin, when in order, averages six hundred pounds of clean cotton per day. Nine hundred pounds have been obtained in one day of eleven hours, and seven hundred and twenty pounds for twenty-two consecutive days."

We have already given an account of Eave's gins in a former number, and shall not, therefore, detain the reader longer than to state, that they are on this place propelled by animal power, placed below. The whipper is worked by the same force. The cotton is taken up into the upper story, where it is thrown into the whipper in certain quantities, which after receiving a certain number of strokes, is thrown out. This is effected by a very simple contrivance, which after a certain number of revolutions of the spokes, opens the door and permits the cotton to escape. It remains open but for a short time and then closes, until the revolutions are again completed. The rollers for Eave's gin are rather troublesome to make, owing to their great length; this, however, is in some measure obviated, by an instrument accompanying the gins, which, on receiving the roller in its rough state, shaves off all the superfluous wood, until of a certain size, when it passes through a hole made of the size necessary for the roller to be. But even this is troublesome, and to obviate it, Mr. Cooper has fixed in the left of the gin-house, somewhat in the manner of a lathe, with a band attached to one of the wheels used for the gins. All, therefore, that the attendant has to do, is to fix a rough roller in this machine, and draw on the band—he need not trouble himself further, but may attend to other work, for when the roller is finished, the band is thrown out of gear and runs idly on a loose whirl.

Before closing our account of this crop, we wish to call the attention of our readers to the topping of the cotton plant, in order to check its too luxuriant growth and force it to mature its pods. We found the practice to be common in that part of Georgia we visited. It requires judgment in its use, and is not to be resorted to at all times, or in all seasons, but only when the plant is very luxuriant, and there is some fear of its continuing its growth so long as to leave but little time for the maturing of its pods. There is some diversity in opinion as to the proper time of performing this operation, but all concur in stating that when judiciously done, the advantage is very manifest. We are aware that topping of cotton is not new in this state, it has been tried, and we believe abandoned, principally on account of its causing a new growth, of what are termed *suckers*. This will be the case whenever the operation is performed at an early stage, but is not so likely to occur when done late. What we wish particularly to notice is, the fact that the production of suckers is not so much dreaded there, for their removal is considered easy, and enters into

the calculation of work to be done. We have often seen our planters in despair, because a second growth had made its appearance, owing either to too much rain, the plants being violently agitated by high winds, or other causes. We do not recollect a single instance in which any attempt was made to remove these suckers, and force the sap to resume its original course. This is easily accomplished, much more so than is usually thought, and there cannot be a doubt but that the removal of these would prove highly beneficial, and perhaps, check, if not prevent the dropping of the bolls.

(To be continued.)

(From Goodsell's Genesee Farmer.)

CLOVER AND WHEAT.

Among all the modern improvements in agriculture, none are of greater importance, than the substitution, of a rotation of crops, in place of manure. By a proper attention to this, land may not only be prevented from becoming poor, but may be increased in fertility. For this purpose there has not as yet, been any crop discovered, so generally approved of in this section as clover, or at least none that is so well calculated to improve our lands and prepare them for the leading crop, wheat, which under proper management will in all probability continue to be the staple article of western New York.

Barn yard manure has always been considered valuable by every well informed agriculturist, and there are many crops to which it can be applied to advantage. The crops to which manure from the yard or compost heap are applied to best advantage are of small consideration when compared to our crops of wheat. Manure might also be applied to those lands intended for wheat, but where farmers sow from fifty, to two hundred acres, the small quantity collected in yards and compost heaps, would do but little, towards preparing or keeping farms from becoming impoverished. Even allowing that a sufficient quantity of barn yard manure could be collected by every farmer for his wheat fields, it could not be applied at the same expense, with which fields are now renovated by means of clover and as proper rotation of crops.

That a rotation of crops is absolutely necessary upon most lands, every experienced farmer will readily admit. It is a well established principle that each plant requires a particular kind of food, and by continuing the same plant upon grounds for many years, that particular food becomes exhausted, but by introducing a crop which requires a different kind of food, the former or that exhausted by other crops is allowed to accumulate; the crops requiring the same food, may in some instances, be allowed to succeed each other, by introducing the one less valuable, and allowing that to decompose upon the soil to furnish food to the more valuable one. This is the case when clover is used to prepare the ground for wheat.

By analysis it is found that both clover and wheat contain a small quantity of lime, and of course soils which do not contain this naturally, must be supplied with it artificially, before these crops may be grown to advantage. Lime requires also to be in different conditions, in order to be taken up by different plants. Experience has demonstrated that when the sulphate of lime, or plaster of paris is applied to soils, that it increases the growth of clover, and that when clover grown upon the soil is mowed, either by ploughing in the whole crop or by turning under clover stubble, that it prepares such soils for producing wheat in greater perfection than when manure is applied from the yard.

It has been by pursuing this course of tillage, or rotation of crops, that many lands in western New York, which by nature were thin, light soils, and which did not when first cultivated produce more than fifteen bushels of wheat per acre, have been made to produce from thirty to forty bushels.—How long the fertility of lands thus managed will continue to increase is un-

known, but thus far our fields which have been cultivated the greatest length of time, where attention has been paid to rotation, produce not only the greatest quantity but the best quality of wheat.

Where fields are clear from stumps and stones so that they can be ploughed deep and regular, and where proper attention has been paid to seeding with timothy and clover, many prefer turning clover either in crop or stubble under, and allowing it to remain, working the soil lightly with drags and rollers. In this way it is thought the greatest advantage by the preparatory crop is realized.

(From the United States Gazette.)

MARL IN NEW JERSEY.

MR. EDITOR:—I recently furnished you with some brief notes of a ride in West New Jersey, and lest the account of forests, swamps and wild beasts, with which they abounded may create erroneous impressions in the minds of those who are unacquainted with that part of our sister state; will you allow me space to say how much I have been delighted with a large portion of it. The land to a considerable extent is of a very superior quality, and in the counties of Cumberland and Salem, especially are farms which I have never seen excelled. They are under the most perfect state of cultivation and yielding rich crops to reward their industrious and intelligent possessors.

The marl formations which abound in some parts of the state are a subject of interest and furnish to the farmers a source of improvement almost incalculable. I have seen lands of a light, unpromising soil, improved to an astonishing degree by the use of this unctuous substance; and in one instance visited an extensive field of corn, the stalks of which were strong and full, and shot up to the height of twelve and thirteen feet! The best beds are rare and in much request, the marl being conveyed to a distance of fifteen and twenty miles, and in fact, some years since, a number of the farmers in Bucks county, Pennsylvania, associated themselves together for the purpose of supplying their lands with marl. They purchased marl beds in the upper part of Salem county, convenient to the Delaware; but after opening their pits and working them for a short period, the project was abandoned. Near Woodstown, in the above county, the pits are found very valuable and are worked to a great extent, the excavations in one instance extending over three or four acres. The marl thrown out here is of two colors; that of a dark reddish hue, resembling iron ore, is filled with innumerable shells, bones of large fish and other marine remains, which soon crumble, on being exposed to the air. The other description which is the most valuable, is of a very dark color, frequently of a jet black, and is entirely free from shells. It is a soft oily substance, which when brought out from a considerable depth is exceedingly salt and in some instances so strong as completely to destroy the land on which it is spread, rendering it entirely unproductive for four or five years. After that period, however, the soil is strong and productive to an astonishing degree.

The marl is sold at the rate of ten dollars the square rod and excavated by the purchaser.

I have never seen this subject treated of, and yet it appears to possess a great degree of interest in connection with the numerous and striking evidences, which exist of the probability of this entire part of the state having once formed the bed of the sea. I have noticed the existence of those beds, strongly impregnated with salt and abounding with sea shells and other marine substances, the bones of large fish, teeth of the shark, &c. through Salem, Cumberland, Gloucester and parts of Burlington counties, running a few feet below the surface of the earth, through a country remarkable for its sandy and uniformly level character, up to a distance of sixty or more miles from the sea shore.

(From the Southern Agriculturist.)

ON THE HESSIAN FLY.

Rocky Grove, Abbeville District, July 8, 1833.

Dear Sir,—To an upper country planter, whose interest, in consequence of his distance from a seaport or market town, compels him to attend to those small matters which seem more appropriately to belong to a farmer, and without attention to which it would be difficult for him to make himself and family comfortable, a wheat crop is of much importance. Unfortunately, this crop is very liable to failure, especially in the Southern States, from causes which do not at all, or not as seriously affect other crops; so much so, that I have, during the time I have been cultivating it, lost, totally, exactly one crop out of every three; beside, having at other times my crop much shortened. I have been, however, in this respect, more unfortunate than the majority of my neighbors, but several have sustained fully as great and frequent losses with this crop as myself. These causes of failure are the fly, the rust, (which I believe in Virginia is called the copper,) and the late frosts, which, from our very variable climate, frequently occur as late as the month of May, and which affect wheat when in joint. For the purpose of inviting discussion on the causes of failure, and eliciting the opinions of others, I will offer you my views on the subject as far as I have formed any, and notice opinions thereon prevalent in my neighborhood, and those elsewhere which I have heard of.

The fly first made its appearance in America, at the north, during the revolutionary war. Either from the supposition that the Hessian troops had brought it over with them, or from the angry feelings with which our forefathers viewed these hireling soldiers as intermeddlers with what was considered a family quarrel, this insect got the name of the "Hessian fly." In 1787, they did incalculable damage to the wheat crops in Pennsylvania and Maryland; since which period they have gradually travelled south and west, and made their appearance in this neighborhood about twelve years ago, since which time their depredations on the wheat crop have increased until it amounts to a serious evil. They are a small fly, not half the size of the common house fly, in shape like the locust, of an ash color early in the spring, but afterwards of a greenish hue. They appear to have no instinctive predilection for any particular plant, but impregnate grass, plants and shrubs indiscriminately. Some are injured by them, others are unhurt; to what they are most destructive. They complete two generations in one year. In the autumn, they deposit their eggs at the root of the wheat at the surface of the ground, which becomes a maggot, and is transformed into a chrysalis before the cold weather sets in, in which state it remains until the spring, when it is transformed into a fly, which now deposits its eggs near the roots and at the joints of the wheat after it shoots, and which is found in a chrysalis state in the time of harvest, and becomes a fly in a short time afterwards.

The autumn fly is said to be most destructive; but from the information of a "Planter" of this district, who sowed his wheat too late to be impregnated by the autumn fly, and yet had it destroyed so much by that insect as to render it unworthy of being harvested, as well as from what my wheat has suffered, I hesitate not to say that the spring fly does sometimes destroy the wheat crop totally, whilst at other times, it only partially injures it. When the wheat is highly impregnated in the autumn, it will not even shoot in the spring. I this year lost one field of eleven acres of wheat by the fly, (which, induced by particular circumstances, I ventured to sow earlier by one or two weeks than usual,) so completely, that if every plant which had shot up and produced heads had been collected and placed together, they would not have covered a quarter of an acre, as it should be. Wheat will sometimes shoot up strongly in the spring and give promise of a full crop, but a great many stalks will not produce heads, and of those that do, num-

bers, in proportion to the injury received, will fall down and not mature, so as to occasion sometimes a total loss. If the stalk is examined, many of the flies in a state of chrysalis will be found at every joint under the outer covering, and also near the root of the plant. I have not formed the opinion that when wheat does not shoot in the spring, its destruction has necessarily been occasioned by the autumn fly; for such an effect may, perhaps, be also produced by the spring fly where they have attacked the wheat very badly; but whenever any of the chrysalis is found at the joints of the stalk, I think the inference is irresistible that the spring fly has had some agency in the business. How is this devastation to be avoided? If the natural history of the Hessian fly, above attempted, be correct, and I believe it to be so, having paid much attention to the subject, there can then be no doubt, but that the destruction occasioned by the autumn fly may be completely avoided, by not sowing wheat until late in the year; either, just preceding cold weather, so that the wheat will not appear above ground until after one black frost, or wait until a killing frost has actually occurred. But it may, and has, and will again be asked, if you steer clear of Scylla in this way, how will you avoid Charybdis? If you sow your wheat late to escape your autumn fly, do you not run a great risk of having it destroyed in the spring, or early part of the summer by the rust, as the later wheat is coming to perfection the more danger is there of that disease? This may be so; but I have arrived at the opinion that this danger is not as great as is apprehended from late sowing, and may to a great extent be avoided. I have seen lawler wheat sown in August, totally destroyed by rust, and the same kind of grain sown in November, entirely escape it. But the rust, I will remark on upon another occasion, and confine myself upon the present to the fly. I am, therefore, decidedly of opinion that by the late sowing, say from the 15th of October to the first week in November, in this state, the autumn fly may be avoided, and in this opinion I am supported by every agriculturist in my neighborhood with whom I have spoken on the subject, and by others. But how shall it escape the spring; for although we can avoid the autumn fly by sowing late, we cannot, in that way, escape the spring fly? Steeps of various sorts have been recommended as specifics against the fly, but I have no faith in them for this purpose. No doubt they may cause the young plant to shoot with more vigor at first, and are so far beneficial, and their effects may even be felt for some time. They may also be very beneficial where any disease exists in the grain, as the smut, &c.; but how they can affect the fly, the egg, the maggot, or the chrysalis, which have nothing to do with the steeped grain, and not even with the plant which springs from it until several months after it has been steeped, sown and rotted, does appear so unreasonable to me, that I not only cannot believe it, but would not have noticed it, was it not that such an opinion is held by some. A very intelligent, observant, and experienced planter in my neighborhood, has remarked that wheat sown amongst cotton has not suffered from the fly, which he thus accounts for: he thinks the fly is not partial to the cotton, and as that crop is to a greater degree than any other kept free of grass, the fly finds nothing in the field on which to deposit its egg in the autumn, consequently there are no flies to be found there in the spring, or but few, and so the wheat escapes the spring fly. Now if this be so, it would seem that a remedy, at least to a considerable degree, has been discovered against the spring as well as the autumn fly, which is to sow wheat after a black frost, on ground which has since the time of harvest been kept perfectly free from all vegetable growth; (a plan which I find is strongly recommended for this very purpose in the Domestic Encyclopedia;) or it may be sowed in a cotton field which has been well worked and kept perfectly clean. In reply to this, however, I must remark, that the eleven acres of wheat I so totally lost this year, was

sown in a cotton field; but then, again, it must be remembered, that I sowed early in October, and that the cotton fields were last year uncommonly foul with grass, which came there after the crop was laid by, occasioned by the drought throughout the summer, and the continued rains in the fall, when the cotton was too large and old to be worked.

Respectfully, yours, THOMAS PARKER.

HORTICULTURE.

(From the Southern Agriculturist.)

AN ADDRESS

Delivered before the Horticultural Society of Charleston, at the Anniversary meeting, July 10, 1833.

BY REV. J. EACHMAN.

(Concluded from page 130.)

The subjects to which our attention as horticulturists should be directed, are so numerous, that time will only permit me to glance at a few that have struck me as most important. Our vegetable gardens to-night, particularly in the winter and the spring, be made among the very finest in the world. Many of the vegetables which in Europe are raised with great care and expense in hot-houses, thrive and flourish with us in the open ground. Our turnips, carrots, ruta baga, kohl rabbi, green peas, spinach, salad, cellery, &c., can be had in perfection during the whole winter. Our melons can be sent to the New York and Boston markets six weeks earlier than any that are produced in that region. Among the muskmelons, several species that go under the name of Persian melons, and whose flavor is very delicious, ought to be more cultivated. There is another melon from Rio Janeiro, said to possess the flavor of a peach, which it would be well to introduce among us. The great secret in preserving these highly flavored fruits from degenerating, is to remove them entirely from all other plants of a similar genus, and cultivate them carefully in a field by themselves. The Irish potato (*Solanum tuberosum*) instead of being planted, as is the case at present in our warmest sandy soils, ought, for the sake of experiment, to be planted on the coldest clay grounds. The finest flavored potatoes are raised in cold climates—in Nova Scotia, and in the coldest parts of England. Col. Pon, of our State, I am informed, has succeeded in preserving the flavor of the Lancashire potato, by planting it in a part of his rice-field, that is somewhat elevated. Among the turnips, the yellow Scotch, the yellow Maltese, and Hybride, have succeeded remarkably well. Cabbages can be raised the whole year round, provided the different kinds suited to the seasons are sown in rotation, and provided we choose a dry soil in winter and a moist one in summer. The impression is very general, that this species of vegetable will prove inferior, unless the seed is annually imported. This is certainly a mistake, the best fall and winter cabbage brought to our market is produced by a lady, who, for the last twenty years has been in the habit of preserving her own seed. The cow-cabbage, from all that I have seen, I am inclined to believe, will prove a failure. The heat and moisture of our climate during summer, together with the worms that prey on their roots, prove fatal to the great majority of these plants before they are a year old. The same fatality attends the most kinds of cauliflower when planted in the spring. This, however, is not the case, if the seed is sown in August, since in many instances a fine crop of this delicious vegetable is produced in December and January, particularly if the winter does not prove too severe. The early French cauliflower has recently been introduced as a spring vegetable, to be sown in February, and I have seen it in great perfection, in at least, one of the gardens of our city during the last spring. The species of brocoli, called the Russian sulphur, succeeded better with us during the last winter than any other that I

have seen. The plants of the sea-kale now in a state of culture seem fully to answer the expectation of those who have introduced them. The New-Zealand spinach (*Tetragonia expansa*) grows luxuriantly, with scarcely any cultivation. A new vegetable has very recently been introduced into Europe, through the zeal of David Douglass, an eminent botanist, under the patronage of the London Horticultural Society. It is called the *Ocra crenata*, the flavor is said to partake of both the potato and chestnut. It is so productive that a bulb weighing one ounce, last year produced ninety bulbs weighing four pounds. This is said to be so great an addition to our culinary vegetables, that it is supposed by some, it may in time, supplant even the potato itself. The artichoke, (*Cynara scolymus*), of which there are several very superior varieties, is a great delicacy, and succeeds well in our mild climate. The tart rhubarb has come to perfection in a few of our gardens, and failed in others. The species called *Rheum undulatum* and *Rheum hybridum*, are deserving of a more careful cultivation.—It is probable also, that the Turkey rhubarb of commerce (*R. palmatum*) may be found to succeed in some of the middle and upper districts of our State.

The fruit garden is deserving of no inconsiderable share of our attention. The apple does not generally succeed well in the maritime districts of our State. Still there are so many varieties of this delicious fruit, that the careful and zealous horticulturist may yet discover some kinds that are adapted to our soil and climate. I tasted an apple about ten years ago, that was raised on Charleston Neck, on a farm now belonging to Dr. Porcher, from a tree which had regularly produced apples of a very fine flavor for several years in succession. There is an apple tree in Italy, called the Mala Cara, which is too delicate to survive the cold winter of our Northern States, that might, perhaps, be successfully cultivated here.

The pear is another fruit which deserves our particular attention. Pear trees from the south of France appear to thrive better with us than those from the Northern States of our country. This is probably owing to their having been naturalized to a climate, which bears a considerable similarity to our own. The garden of the late Mr. Charles Florian Mey, of this city, has, for more than twenty years, produced regular and abundant crops of pears; these trees were imported from France. On the plantation of Col. Magwood, the fruit of some of our finest varieties, and among the rest the sickle pear, came to great perfection last year. Although this is a tree, which in its natural state, requires many years of patience before we can reap its fruits, yet inoculation and grafting will generally remedy this inconvenience. The apricot (of which there are many varieties) on account of its blossoming early, is subject to be greatly injured by the late frosts of spring. I would recommend that an attempt be made to retard the blossoming of these trees, by planting them in a northern instead of a southern exposure. The peach and the nectarine arrive at great perfection in some of the yards of our city, and in some situations in the country. The great enemy against which we have to contend in this fruit, is the insect (*curculio*) which perforates the fruit sometimes at a very early stage, and which has heretofore baffled all our skill in finding a remedy. Our city will, probably, however, be abundantly supplied in a few years, from orchards planted in favorable situations in the country, near the rail-road, the fruit of which may be conveyed to our market in a few hours.

There are scarcely any of our northern plums that can be successfully cultivated along our sea coast in the south. The variety called the red gage has succeeded best, and some other kinds have done well for a year or two, in the very valuable fruit garden of Mr. Michel of this city. There is, however, a native plum very little known here, which in common with other varieties, is called the Chickasaw plum, the flavor of which is nearly equal to that of the green

gage, that can with great ease be cultivated here, and is deserving of more of our attention.

Our situation on the sea-board of Carolina is remarkably well adapted to the cultivation of the fig-tree. This is decidedly one of the most valuable of our fruit trees. It bears abundantly and frequently three crops in a season—is not subject to the ravages of insects or liable to be affected by our seasons. The fruit is always wholesome, and is the more valuable on account of our being unable to eat it except when fully ripe. We have, in our neglect of the cultivation of the fig, acted up to the usual disposition of man, in trying to procure that which is expensive and difficult, and neglecting that which is cheap and can be easily obtained. Some of the finest varieties of this fruit have not yet been introduced into our gardens; a little attention from the members of this society will enable us to have a regular succession of the finest flavored figs during five months in the year.

Orange and lemon trees were formerly more extensively cultivated than at present. The occasional severe frosts of our winters will probably ever remain an obstacle to our being able to cultivate these fruits with certainty. The cherry, with the exception of the wild species, has seldom succeeded well; the variety called the morella cherry, produces better fruit with us than any other that we have yet tried. Our native kinds however, admit of great improvement by cultivation. The quince requires a colder climate than ours, and yet, I have occasionally known this species to bear good fruit, for several years in succession. I remarked that they succeeded best on a clay soil, and in a northern exposure. There is great variety of the fruit-bearing pomegranates, all of which arrive at great perfection in this climate, and we should use our endeavors to introduce among us those varieties that are most valued in the east.

The current and gooseberry we are unable to cultivate. There is a variety of our native mulberry (which has, however, become very rare with us) that is but little inferior to the much prized *Morus nigra* of Europe; the latter also, I have seen bearing fine fruit in the gardens of Mr. Noisette and Mr. Howard of this city. It may not be foreign to our subject to notice here the *Morus multicaulis*, a new species of mulberry tree recently introduced, which for the raising of the silkworm will probably supplant the white mulberry now so generally cultivated. This tree puts out its leaves so much earlier than the other, that they are three inches broad before those of the white mulberry begin to unfold. The mulberry tree is easily cultivated—our soil and climate are admirably adapted to its growth. Some of those that were planted by the first German Missionaries at Ebenezer, Georgia, during the time of governor Oglethorpe, are still in a flourishing condition. The culture of the mulberry ought to be more attended to in our southern country. The time may not be very far distant when the reduced prices of cotton, in consequence of an extended cultivation, may render the raising of silk, particularly the raw material, one of the staples of the South.

I regret to say, that my own experience, with regard to the successful cultivation of the olive, holds out but little encouragement. It is but seldom that amidst our varying seasons, the fruit of the olive has arrived at any degree of perfection. It is somewhat singular too, that whilst in the South of Europe, the olive is propagated with ease from cuttings from the largest stem to the smallest twig, and even from the bark itself; yet, in our Southern States, it has been discovered that it is very difficult to propagate this tree in any other way than by the seed. Mr. Conner, of St. Simon's Island, I am informed, has partially succeeded in obtaining fruit from trees imported from France.

With the vine, we are likely to be far more successful. Whilst many varieties are not suited to our climate, others, and particularly native varieties, have succeeded even beyond our expectations. To the perseverance and skill of Mr. Herbenmont, of Columbia, and Mr. Abraham Geiger, of Lexington, our south-

ern country is indebted for much information on the subject of the culture of the grape, and it is now believed that many portions of the poorest pine barrens in our middle districts, are admirably adapted to the growth of the vine. In the neighborhood of our city, many varieties of the grape, for the use of the table, are produced, as our several exhibitions have abundantly testified.

The camphor tree would, I am induced to believe, stand the severity of our coldest winters. There is one that was not long since growing in the garden of the late Mr. Young, of Savannah, that appeared never to have been in the least affected by frost. The tea-plant (*Thea viridis*, and *hiberi*) has by successive planting of the seeds, from year to year, been at last so acclimated in the garden of Mr. Noisette near this city, that with very little protection, it may be cultivated and bring its seed to maturity in the open ground; and we hope soon to be able to regale the ladies who honor our exhibitions, with a cup of their favorite beverage, procured from plants raised on our own soil.

America has recently given to the world a new fruit, called *Shepherdia argentea* or buffalo berry. It is of a bright red color, growing in clusters, and said to be very delicious; it may yet prove to us in the South a substitute for the cherry. This tree, growing to the height of about fourteen feet, was found on the banks of the river Platt, and on the Missouri, and was brought to us by the indefatigable explorers of our western wilds; it has borne fruit near Boston, and two trees of this species have been for several years growing in the garden of the editor of the Southern Agriculturist, and thus far seem well adapted to our climate.

The strawberry, a fruit that has always been a favorite, is well deserving of the attention and encouragement of this society. There are some varieties that are adapted to a dry, others to a moist soil. Some of them cannot endure the heat of our summers, whilst others seem scarcely affected by heat or moisture. It is more than probable, therefore, that we may find varieties adapted to the soil of every garden. I am informed that Mr. James Gaillard, of Pineville, has different varieties of strawberries succeeding each other during the whole of the season.

The propagation of new varieties of fruits from the seed is highly deserving of the attention of the horticulturist. Some of the finest varieties of fruits in the world have been produced in our own country, without cultivation, and were discovered as it were, by mere accident. The original tree of the famed Newtown pippin, is still growing on Col. Morris' farm, a few miles from New York, and no one can tell whence its origin. The Sickle pear, one of the most delicious in the world, was found in the meadows of a gentleman, after whom it has been named, which had long been appropriated to the pasturing of cattle. The delightful Washington plum, had a still more narrow escape. An inoculated tree was sent, I believe, from Long Island to New York; it did not bear for many years. During a storm, the tree was shattered to pieces and broke off below the graft. A shoot from the natural tree sprung up, and here was the first origin of a plum, which, on account of its superiority, was named after the greatest of men.

The subject of the naturalization of plants has but recently engaged the particular attention of horticulturists in France, Holland and England. The plan at present found most effectual in acclimating plants from warm latitudes, is to place them for a time in the hot-house; then into the green-house; after this, to remove them to the open ground surrounded by clumps of trees to shelter them from the severity of the weather, and when the plants have become sufficiently hardy, these protecting trees are removed. Although I have not been successful in my attempts, according to this plan, yet it is certain that in England, they have succeeded in cultivating in the open air shrubs and plants, which heretofore were always considered as requiring the protection of the green-house. They

have now, as they inform us, growing, without any kind of protection, many varieties of the Camelia, the tea-plant. (*Thea bohea* and *virides*.) the fragrant olive, (*Olea fragrans*.) the camphor tree, (*Cinnamomum camphora*.) The ladies ear drop, (*Fuchsia coccinea*.) The *Oleander splendens*, *Pittosporum*, the myrtle and *Passiflora*; and if they can accomplish so much in the bleak and variable climate of England, how many trees and shrubs from Florida and the Indies, may we not be able in the course of time successfully to introduce into our soil and climate?

The cultivation of trees, for shade and ornament, should engage a portion of our attention, particularly in our city, where we can thus bring verdure into the air—produce an agreeable shade, and contribute to the health and comfort of our families. Among the shade trees which I would particularly recommend, as deserving of cultivation for their beauty and regularity of form—their evergreen leaves and quickness of growth, is a species of oak, improperly called the water-oak. It is figured by Michaux, but so incorrectly, as to mislead us. It is however minutely described by Mr. Elliott, as the *Quercus laurifolia*. A row of these beautiful trees may be seen in front of a house in Vanderhorst-street, in Radcliffeborough, in the suburbs of this city. It is very desirable also, to awaken a little more attention to the subject of respect to the dead, by encouraging the planting of ornamental trees in our grave yards. We, who have such a veneration for those who have gone down to the dust, that the poorest has his obituary, and the obscurest his monument, are nevertheless very negligent of the burial place, where sleep the ashes of those whom we most esteemed and loved. The Indian mounds in our native wilds bear testimony to the veneration of the savage for the spot where the bones of his tribe repose. The Turk removes every thing from the mausoleum of the dead, that might offend the eye, and cultivates there the trees, shrubs, and flowers, that may invite the melody of the grove, and awaken and strengthen in the heart, the hopes of immortality; and yet the grave yards of our own christian land present a picture of barrenness and desolation. Not a tree or shrub is planted there. No cypress or willow casts its shade, and no rose or narcissus decks the tomb. The Jerusalem oak, (*Chonopodium anthelminticum*.) the exotic melilotus, the solidago, the thistle and nettle, which shelter the abodes of the adder and the toad, almost present a barrier to our entrance. An attention to this subject is beginning to be awakened in our country. The clean and ornamental grave yards of the Moravians, have long since been regarded with approbation, and the example set us at Boston, in their new cemetery, surrounded with every thing that can awaken the finer feelings of the heart, and render such a place sacred to pleasing religious meditations, ought to be imitated by other cities. Under any circumstances, we may render our grave yards less offensive, by giving them clean paths and shady trees. Our own evergreens, the cedar, the palm, (*Chamaecyparis palmata*.) and the holly, will remind us of the sentiments of the early christians who taught that they typified the mild and unfading lustre of christianity so dear to the mourners' heart; and the yew, the cypress, and the willow, dedicated to the silent solitude of the tomb, might convey to us lessons of instruction and comfort.

With regard to the shrubs and flowers which we may easily cultivate in our gardens, our climate is admirably adapted to those which possess as great value, on account of their beauty and fragrance, as any that the world can produce. Nearly all the plants of China and Japan, as well as a great number of those that are natives of the Cape of Good Hope, thrive with us in the open air as well as they do in their native climes. Some of the ladies who take an interest in our society, cultivate nearly all the variety of roses that have yet been introduced into America. If the north excels us in the cultivation of the crown imperial, the peony and the tulip, we can vie with it in

the myrtle, the lagerstromia, the oleander, the flowering pomegranate, and our own fragrant jessamine. Although the ranunculus and the hyacinth require some care and attention, yet they are so generally cultivated among us as to form the pride of our gardens in the spring. The fragrant *Laesonia inermis* (the famed henna of the east) has been blooming for the last seven years in the open ground of one of the gardens of our city. A few of the ladies of our city, whose public spirit deserves the warmest thanks of this society, have with much trouble and expense, introduced among us many rare and valuable exotics, and their contributions at every exhibition of this society, convince us that they have not grown weary in the cause.

One of the most favorite exotics now cultivated, is the dahlia, which can be brought to very great perfection in our climate. In three of the gardens in and around our city, are found many choice varieties of this beautiful georgina; a flower so beautiful and so easy of culture, ought to be found blooming in all our gardens. We should also pay more attention to the arrangement of the flower garden—to the planting of our bulbs and annuals, in masses, so as to insure a regular succession of flowers; for, with a little attention to this subject our Carolina gardens may be always in bloom.

The forests of Carolina abound in a vast variety of beautiful flowering trees and shrubs, which we ought to transplant into our walks and gardens, and cherish and cultivate with care. Is there a tree in the world that is in every respect more worthy of admiration than our Magnolia grandiflora, the majestic native of our woods? Our Calico tree, (*Kalmia latifolia*.) our white flowering stuartias, sprinkled over, as it were, with flakes of snow—our beautiful robinias are found blooming abundantly in our mountains; and along our water courses. Our gordonias—our sweet scented shrub, (*Calycanthus florida*.) one of our species of smilax, and vast numbers of other choice flowers perfume the air for many miles around. Our azaleas, philoxes, scarlet lobelias, bignonias, honeysuckles, jessamines and pride of the meadow, (*Thysanellus frutescens*.) give to the woods of Carolina, a charm which not only fills the heart of the lover of nature with delight, but causes even dullness to pause, to wonder and admire.

From this imperfect sketch it will be easily seen how much remains for this society to accomplish. That it has already been productive of some good, is evident from the increased attention which has of late been devoted to this subject, and from the proofs which have been afforded at our several exhibitions. A lady in this city who has heretofore made a livelihood by the rearing and selling of plants, has recently stated, that such has been the demand for flowering shrubs and plants since the establishment of this society, that she has been encouraged greatly to extend her establishment, and is now on a visit to the north, in order to obtain choice and rare plants to accomplish this object. A few new gardens have lately been laid out, in which great taste has been displayed; and at least, one scientific gardener, thoroughly skilled in his profession, has found employment among us. From these favorable beginnings, have we not some grounds for anticipating future success?

The subjects which are to engage the attention of this society, are all of them innocent, if they are not otherwise profitable. The God of nature has cast our lot on this teeming earth; he ours the task of doing all that in us lies to render that earth the abode of comfort and of peace. If we do not give to man that which is profitable in a pecuniary view, we will remind him that many things may be kept rather for companionship than profit, and that every little extra he and enjoyment makes a man's home dearer to him. The vegetables which he has raised with his own hands, in his own garden—the tree and the vine which his wife and his children have assisted him in planting—the fruits which they have admired and relished together,

and the flowers which they have reared with mutual care, all serve to strengthen the bonds of conjugal, parental, and filial love.

And may we not hope, that at least, in the floral department we may be aided by the fair hands, and the approving smiles of the ladies of Charleston. They have done so much for us already, that I am sure they require no solicitation to continue their exertions. I could wish that they might be encouraged to follow the examples of similar institutions in other cities—become members of our society, and aid us by their experience and encouragement. Under any circumstances, it is in the power of our fair friends, not only to refine the taste of this community by their countenance, but to give a grace and a stimulus to this society, which our own endeavors could never accomplish. Then may we expect that "this annual festival of flowers will be a banquet of delight where beauty will rule the hour," and pleasure and usefulness go hand in hand.

In endeavoring to advance the interests of this society, we do not wish to elevate it above other institutions, whose objects are a more extended benefit to mankind, nor do not ask the community to make any costly sacrifices to support it. We desire to give a direction to the public taste, and by enlisting it in the various subjects of horticulture, we hope to improve the morals of the people, and to add to the sum of human happiness.

We are told that the Arcadians were the most savage of all the Greeks, till Pan taught them music. We admire the fable, let us profit by the moral. By directing the minds of our people to innocent and profitable employments, by creating a love for rural pursuits and the beauties of nature, we may do much for our sunny South—we may form a population fitted to its beauty—we may be enabled to banish ignorance, vulgarity, and crime, and invite the angel of happiness and peace, to make his everlasting abode with us.

Note.—In preparing the above address, the writer has referred to observations made in his common place book for years past. He finds that he has not always noted the names of authors, from whom his information has been derived, and is uncertain whether he quoted their language correctly. This will account for his not having been able to refer to authorities in all cases.

EARLY APPLES.—I have often regretted that so many of our independent farmers should be so badly provided with early summer apples. Every one who owns a lot of land, ought to have them fit for cooking by the middle of the seventh month, (July,) and ripe and mellow by the 20th. *Prince's yellow harvest* (sometimes, though improperly, called the *June-cake*.) would supply them with these advantages.

There is another apple which I have not seen noticed in the books, excepting *Prince's Short Treatise*, but which I can recommend as a remarkably fine summer fruit: it is the *sine qua non*. It comes into use immediately after the yellow harvest. The following account is copied from the "Short Treatise":

"*Sine qua non*. This title I gave myself to the most pleasant flavored apple I have ever seen, perhaps, not excepting the "yellow harvest;" from the belief that those who become familiar with it will deem it an indispensable appendage to their orchards. It is nearly green when full ripe. For the table or for cooking, I consider it not surpassed by any of its season. *The original tree stands in a field about two miles from my residence, and is a wildling.*"

With *Buffington's early*, which ripens at the same time, I have been acquainted more than forty years, and we think, in flavor it has no superior. It is a smaller apple than the *sine qua non*, flat, sometimes of a beautiful white, but more commonly has a blush on one side. It is not so productive as many other kinds, and this may be the cause of its not being more generally cultivated. I can trace it no farther than to Chester county, in Pennsylvania.—*Gen. Farmer.*

DURHAM SHORTHORN CATTLE.

I have for sale the following fine animals:

One full blood bull, one year old last spring—a very fine animal. Price \$500.

One full bred Heifer, two years old, now springing, but the calf will be but half blooded, being (accidentally) by a common bull. She is a very fine Heifer, and will be sold for \$225.

Less than Full Blood.

One Bull, three years old, fifteen-sixteenths Durham; has been pronounced by good judges as fine an animal as was ever in the United States. He would be worth twice the price now asked for him if he had the other sixteenth of Durham blood. He will be sold for \$300.

One Bull, seventeen months old, from good stock, seven-eighths Durham. Price \$175.

One do, twelve months old, a fine Bolivar Calf, seven-eighths Durham. Price \$150.

One do, fifteen months old, three-fourths Durham, has all the appearance of a thoroughbred animal. Price \$150.

One Bull, three years old, half blood Durham, a very handsome animal, and from good stock. Price \$150.

One Cow, eight years old, seven-eighths Durham, a fine breeder, and now in calf by a full blood bull. Price \$100.

Three Milch Cows, half blood Durham, very good milkers, and of good size and form. They will be sold for \$50 each.

Address

L. I. HITCHCOCK.
Amer. Far. Establishment.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The **NEW PINE**, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2.00 per hundred.

EARLY SCARLET, **LATE BOURGON PINE**, and **LARGE EARLY SCARLET**, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, **Downton**, **Gray End Scarlet**, **Bath Scarlet**, **Duke of Kent's Scarlet**, **Raspberry Hawtho's**, **New Black Musk Hawtho's**, **Wilnot Superb**, **Keene's Imperial**, **Keene's Large Scarlet**, 50 cts. per dozen.

MELON, **METHVEN CASTLE**, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

L. I. HITCHCOCK,
American Farmer Establishment.

RHUBARB PLANTS.

I have also for sale **RHUBARB PLANTS**, for tarts.—Price, for year old plants, 12½ cents each—for two year old or upwards, 25 cents each.

Also, **SPINACH PLANTS**, 25 cents each.

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or everbearing Alpine Strawberry, *without runners*, both red and white, may be had at the American Farmer Establishment.—Price \$1 per dozen.

L. I. HITCHCOCK.

POINTER DOGS.

Two full blood Pointer Puppies, ready for delivery, for sale at \$10 each, by **L. I. HITCHCOCK,**
Aug. 30. Amer. Farmer Establishment.

THE FULL BLOOD DURHAM SHORTHORN BULL, HECTOR IS FOR SALE.

This bull was bred by Col. Powel. The beautiful imported bull Memnon was his sire, and Daphne his dam, both of which are recorded in the English Herd Book for 1829. Hector will be four years old in October next, has no bad habits, and is thought by a judicious breeder, who has seen the best of this stock in England and America, not surpassed by any he has seen. Col. Powel says, that in his late agricultural tour to England, he saw no stock superior to the ancestors of Hector. It is a sufficient recommendation of this bull, to state, that he does not in the least detract from the reputation of Col. Powel, as the most successful breeder of this stock in America.

The price of Hector is \$500 cash. Apply to Doctor H. Howard, Brookville, Maryland. Sept. 13.—4c.

LINNEAN BOTANIC GARDEN AND NURSERIES.

Flushing, near New York.

WILLIAM PRINCE & SONS, announce to all the proprietors of Nurseries, and to those who wish to establish new nurseries, that they will furnish all articles desired, at a liberal discount, and a credit that will allow time for advantageous reimbursement. We wish also to make known to all venders of seeds, and to those who desire to undertake such business, that we will furnish every variety of Vegetable, Field and Flower Seeds in quantities, at very low rates. These seeds possess the advantage of being raised under our own observation, or, when imported, of being tested to our satisfaction, and the accuracy and vitality of the seeds are expressly guaranteed. A number of new and choice varieties of Vegetables, will be found in the catalogue, which have never before been offered to the public.— Bulbous flower roots and Dahlias, which are easily transported and generally vended in a dry state, can be supplied to any extent, at rates which will afford large profits to the retailer. Every person already engaged, or who desires to engage in the sale of the above named articles, will, on application, receive all the information, requisite to the object in view, and such an establishment ought to exist in every town in the Union.— The new catalogues with reduced prices and extensive additions to every department, will be forwarded to all applicants, and the present period is particularly suitable for forming arrangements in anticipation of the fall business. A liberal credit will be allowed on Seeds, Bulbous roots, &c. A large quantity of seed, of White Italian Mulberry, Luzerne, White Dutch Clover, Ray or Rye Grass, and Yellow Locust for timber, now on hand.

It is requested that all orders be sent direct per mail, and, whether large or small, they will receive prompt attention. Sept. 13.—4c.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of **FLOUGHS**, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store **AGRICULTURAL IMPLEMENTS**, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of **GARDEN SEEDS**, suitable for the season, and a small quantity of **ORCHARD GRASS SEED**, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

STRAWBERRY PLANTS.

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are:—Large early Scarlet, Pine Apple, Faulkner's Scarlet Pine, Dawnton, Lima, Wilnot's Superb, Roseberry, English Red Hawtho's, Black Musk do, French Alpine, White and Red Monthly, &c. Price \$1.50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.

40 lbs. summer and winter SPINACH.

100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2.50 per lb.

100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year)

Early greys or Scotch KAIL, Brussels SPROUTS, &c. Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,

Aug. 23.

Corner 11th and Pratt st.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—The variation in the prices of produce are so trifling that we find it difficult to make a remark without repeating those of former weeks.—The wagon price of Howard street flour remains at \$6.00, though in a few instances a few cents less have been paid. Corn has advanced a few cents, and this is the only article that has varied.

Tobacco.—Seconds, as in quality. 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Cigars, common, 3.00 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for cigars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ———— Rajaham rock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 362 bbls. Md.; 171 bbls. Ohio, 1 bbl. Kentucky and 1 bbl. Pennsylvania.—total 635 bbls.

Flour.—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.12½ a 6.25; city mills, 6.00 a ———— city mills extra 6.25 a ———— **CORN MEAL** bbl 3.62½.— **GRAIN**, new red wheat 1.14 a 1.16; white do 1.17 a 1.23.— **CORN**, white 64 a 65, yellow, 66 a 68.—**RYE**, 60 a ———— **OATS**, 28 a 31.—**BEANS**, 75 a 80.—**PEAS**, 65 a 70.— **CLOVER SEED** ———— **TIMOTHY**, 3.50 a 4.00 **ORCHARD GRASS** 3.00 a ———— **Tall Meadow Oat Grass** 2.25 a 2.50.—**Herd's**, 1.00 a ———— **Lucerne** ———— a 37½ lb. **BARKLY**—**FLAX SEED** 1.37 a 1.50—**COTTON**, Va. ———— a; Lou. 17½ a ———— **Alab.** 16 a 16½; **Tenn.** ———— a; **N. Car.** ———— a; **Upland** 16 a 18—**Wm. KEY**, hbls. 1-t 1.50 30½; in bbls. 32 a 32½.—**Wool**, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 55 a 40. **Unwashed**, Prime or Saxony Fleece 31 a 37; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do 25 a 26; common, 25 a 26; **Hemp**, Russia, ton, \$170 a 175. **Country**, dew-rotted, 6 a 7c lb. water-rotted, 7 a 8c.—**Feathers**, 38 a 40.—**Plaster** Paris, per ton, 4.00 a 4.12½; ground, 1.50 a ———— hbl. **Iron**, gray pig for foundries per ton 33.00 a ————; high pig for forges, per ton, 28.00 a 30.00; **char** Sus. per ton, 75.00 a 85.00.—**Prime Beef** on the hoof, 5.75 a 6.50.—**Oak wood**, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

CONTENTS OF THIS NUMBER.

Editorial; The Drought; Sinclair & Moore's Nursery; Feasts' Gardens—Corn and Oats—Norton's Seedling Grapevine—On the Culture of Wheat with Remarks on the Blight—Account of an Agricultural Excursion, made into the South of Georgia, in the winter of 1832, by John D. Legare, Editor of the Southern Agriculturist; continued—Clover and Wheat—Marl in New Jersey—On the Hessian Fly—An Address delivered before the Horticultural Society of Charleston, at the Anniversary Meeting, July 10, 1833, by Rev. J. Bachman; concluded—Early Apples—Prices Current of Country Produce in the Baltimore Market—Advertisements.

GENERAL.**Agricultural and Horticultural Establishment: COMBISING.**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

For an extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorized to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, 41 Trine Hitchcock, Baltimore, Md.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, SEPT. 20, 1833.

PATENT MACHINES.—We are frequently, almost daily called upon to notice some new invented machine intended to save labor to the farmer; and occasionally, but seldom, a very good one is presented. But whether good or bad the shackles of the patent law prevent our describing them or recommending them to our readers. The difficulty is as follows: The owners of the patent sell state and county rights. They sell a state right to this man, and a county right to another, so that numerous individuals hold the rights of innumerable sections of the country. Now suppose a farmer in Chatham county, N. C. wishes to obtain a thrashing machine, (of which the patent right is held and sold as above,) and no body in his county owns the right. He applies to the person in Baltimore who has them for sale, and is informed that he cannot sell one to a man living in Chatham county, he applies to others, and receives the same reply. He must therefore purchase the right of the state or county or do without the machine. This is the true state of the case with *nine-tenths* of the subscribers to the American Farmer, and therefore we have long since declined taking any notice of a machine that was not completely in the market, as we do not choose to tantalize our subscribers with descriptions of things they cannot obtain.

The above remarks refer of course to good machines, such as would be of real advantage to the farmer. We are constrained to say, however, that a far different motive actuates us in refusing to countenance ninety-nine hundredths of the patent machines that are presented for our inspection. They are generally worthless, or such slight variations of old machines, that the demand of a fee for a patent is an imposition. Such we of course could not be instrumental in imposing upon the public, and we never notice them—though we confess we ought to, in the way they merit, for the public should be warned against such impositions. If patentees would adopt some system whereby any person could obtain a machine, let him live where he may, then the great difficulty with respect to good machines would be removed; but they are generally anxious to realize the value of their machines at once, and therefore resort to sales of state and county rights; but we are persuaded that the establishment of agencies in all the principal cities, with authority to sell to all persons indiscriminately, would be far more advantageous to them. This plan, it is true, would put the machines "upon their good behavior," they would have to depend upon their own merits; but then a machine that could not bear this test ought not to be forced upon the public by other means.

These remarks are not intended to apply to any particular machine or patentee; but to the system generally pursued in relation to the sale of patent machines generally.

SEEDLING GRAPES.—The editor of the American Farmer has received from Jacob B. Garber, Esq. of Columbia, Pennsylvania, specimens of 13 kinds of grapes raised from seed. Some of them are very good, but most of them are inferior to several kinds of native grapes now in cultivation. The specimens are as follows.

No. 1. A black oval berried grape, raised from seed received from Tennessee. It resembles the Isabella considerably in the berry and flavor, but more foxy, and not so acid.

No. 2. A green round grape, in size and shape resembling the white fox. It is sweet, but pulpy and very foxy, from seed received from Tennessee.

No. 3. A small black grape, very sour and resembling the common chicken grape, the leaves are woolly, seed from North Carolina.

No. 4. A small black round berry, bunches very small, not more than a dozen berries on them; quite acid; but pleasant, seed from Tennessee.

No. 5. A large black berry, resembling the black fox, but not so acid, more insipid, and very pulpy, seed from Tennessee.

No. 6. A medium sized black grape somewhat like No. 1, but rather better flavored, seed from Tennessee.

No. 7. Large white oval berries, tolerable flavor, but pulpy and very foxy. The seed from Tennessee, where the parent grape is said to rival the white sweetwater. If it does, its offspring does little credit to its parent.

No. 8. A large black round berry, resembling the black fox, both in flavor and appearance, very pulpy. Seed from Tennessee.

No. 9. A large oval berry, black and pleasant flavor though pulpy and somewhat foxy. Seed from Tennessee.

No. 10. Similar to No. 5—but not so pulpy.

No. 11. A fair sized round black berry, very acid, pulpy and of a peculiar flavor, but not pleasant. The vine very different from the others, and a great bearer. Seed from Tennessee.

No. 12. Garber's red fox, very similar in appearance to the common red fox, but sweeter and four weeks later.

No. 13. A good sized black round berry, of indifferent flavor, pulpy and foxy.

Besides the above seedlings, Mr. Garber sent us some of the *Lenoir*, a foreign grape sent to Mr. Prince at Flushing, by Mr. Herbmont, of South Carolina. It is a very pleasant little grape; berry of the size of the chicken grape, black and round. Also the *Winne* grape from Albany, sometimes called the *Alexander* and *Lisbon*. It is a good sized black round grape, of a brisk acid, but pulpy and foxy.

And lastly, a specimen of *Norton's Virginia seedling*. In this latter grape we are very much disappointed. We had heard it highly spoken of, and in our last number we copied an article from the *Richmond Whig*, which extolled it highly, and we therefore deem it incumbent upon us to speak of the grape as we find it. It certainly is very inferior to many other native grapes. The berry is round, black, 3-8 of an inch diameter. The bunch small, berries loosely set, flavor a brisk but pleasant acid, not foxy; slightly pulpy. It does not appear to contain a sufficiency of saccharine matter to authorise its being called either a wine or table grape of much value. If the specimen before us is a fair one, and if the climate of Pennsylvania where it grew, has not made a wonderful change in it for the worse, we are compelled to say it has been very much overrated.

(From the Farmers' Register.)

YELLOW LOCUST.

Oak Forrest, Rockbridge county, Va. }
4th July, 1833. }

MR. EDITOR.

Dear sir,—I received yesterday the first No. of the "Farmers' Register," and am gratified to find that it fully deserves all the praise that I had heard or seen bestowed on it. And I beg leave, on a day so suited as this for *thanksgiving*, to offer you my sincere thanks for thus devoting your time and efforts "to the improvement of the practice, and support of the interests of agriculture."

With this tribute to your work and your motive, permit me to invite your attention to a subject connected with the "interests of agriculture," which has lately attracted mine—namely, the growing of the yellow locust in our fields, if not by culture, at least, as *tenants at sufferance*.

A computation of the profit of rearing the yellow locust, by *culture*, is made in the last March No. of the "New York Farmer and American Gardeners' Magazine," as follows: It is supposed that an acre of land would easily sustain four trees to the rod, and at that rate ten acres would sustain six thousand four hundred trees, each of which it is said, would be

worth at a ship-yard, when twelve years old, five dollars—but estimated at three dollars each, make the sum of \$19,200

From which deduct for ten years interest on the value of ten acres of land, \$250
For labor of cultivating by occasional manuring, &c. \$40 per annum, 400
Seed, and two years in nursery, 100

750

Leaving net profit for ten years, \$18,450

However astonishing this result may be, it seems to be fairly made, except that there is nothing allowed for the carriage to the *ship yard*, owing perhaps, to the fact, that where there is easy water conveyance, as is the case in New York, the carriage of lumber is a trifle not worth notice; as it would be in Virginia, if she had canals extending to and through her ample forests.

But *cannalling* and *culture* aside—let us inquire whether, without either, much might not be gained from the Locust as a "*tenant at sufferance*." I use the phrase just quoted in reference to the state of my own farm, much of which having been cleared within the last eight to twelve or fifteen years, continued, for half those periods, to produce a considerable number of sprouts from the roots of defective locusts,* which were felled in clearing; or perhaps, from seed promiscuously and accidentally scattered over the ground. Many of these I suffered to grow where they came up, partly for ornament, partly for shade for stock, but mainly with a view to future use, for posts, scantling, &c. They require no culture nor attention of any kind, except an occasional pruning to lengthen the stem; they do not injure the crop growing about or under them; and I think I may say that every locust *suffered* to grow, in good farm land, for ten or twelve years, is worth, where grown, for various uses, from one to two dollars. But I will specify an instance, and let you judge of the value of one of my *tenants at sufferance*. I wanted lately three pieces of good locust scantling three and a half by nine or ten inches, and twelve feet long—to have found with certainty, a stock for this small quantity of scantling, I must have gone some eight or ten miles to some rich mountain hollow, except for the trees in my own fields—one of which was selected. It made the scantling wanted, of first rate quality; and there was left of it, what for other smaller scantling and posts, was of equal value to the stock used. This stock was cut down, sawed off, and put on the wagon in less than two hours; whilst to have procured such a one at the distance of eight or ten miles, would have consumed a day, with wagon and team, and two or three hands †

Now, as "money saved is money made," I submit to you to fix the value of the locust specified.

Very little attention will insure an endless succession to the trees that may be occasionally used on, or spared from a farm; nothing more being necessary than to leave in their stead one of the many sprouts springing up from the roots of the parent stock; the supernumeraries might be set where wanted. And if, as I suppose, locusts do not materially impede the culture or lessen the product in other things of the land growing them, would it not be well for all farmers to have their outside and other permanent lines of fencing pretty thickly set with them. (say two to the rod.) besides some three or four to each acre enclosed?

Perhaps farmers would answer this query themselves, were you to tell them the number of locusts that would be grown, in the way the question supposes—on a farm of two hundred and forty acres, laid off in six fields of forty acres each; telling them also, the value you affix to the locust specified, by

Your most obt' serv't. REUBEN GRIGSEY.

*The locusts of our common forest land are generally defective—not so when grown in cultivated fields.

†With us, a wagon, team and driver, is usually estimated at three dollars by the day.

AGRICULTURE.

(From the Farmers' Register.)

THE GYPSEOUS EARTH OF JAMES RIVER.

Shellsbuds, August 9, 1833.

As far back as I can remember, crystals were sometimes found on the river shore at Evergreen, (two miles below City Point,) which attracted no farther notice than being admired for their perfect transparency. At that time it is probable that no one in the county had ever noticed crystallized gypsum, or even the lump gypsum of commerce, and no one had given the slightest attention to mineralogy. It is therefore not strange that the nature of these crystals was not suspected before 1817, when some person better acquainted with the subject, supposed them to be pure gypsum. The expression of this opinion attracted some notice at that time, but was received with general incredulity, founded upon the supposed impossibility of gypsum existing in this region, where it had never been heard of before. A lump was submitted to the inspection of a French apothecary in Petersburg, who had "chemist" painted on his sign; he at once pronounced that the substance was not gypsum, but *islinglass*.

The interest which I had felt with regard to this substance was soon after much increased by finding some small specimens on my own land, (Coggin's Point.) Having no prospect of having the question decided by any person possessing a scientific acquaintance with the subject, I consulted books, and found such instruction as enabled me to analyze the substance, and ascertain that it was pure sulphate of lime, or gypsum. But however satisfactory to myself, it must be confessed that my chemical proof was not much valued by others; because it was thought impossible that a process believed to be so mysterious, could be accurately performed by one who confessedly was ignorant of chemistry, and who had only resorted to its aid for this particular object. To settle all these doubts, I sent collections of choice specimens to two of the most distinguished chemists in the United States, with the request that they would give their testimony as to the nature of the substance. To have complied fully with my wish would not have required fifteen minutes of the valuable time of either of those gentlemen; yet neither paid the slightest attention to the subject, nor even returned my specimens. These were certainly the *strongest* among the many proofs I have known of how little aid chemists are disposed to offer to agriculture. As these applications had been made to remove the doubts of others, and not mine, and to attract the public attention to what I considered an interesting and perhaps important subject, the results did not discourage the progress of my own investigations.

I had previously ascertained that the gypseous formation was of much greater extent and importance, than the crystals alone would indicate. In all the different places where the crystals had been found, they were imbedded in the same kind of earth, having a very peculiar appearance, and which extended along the south river bank, with but few interruptions, from Bayley's creek to Coggin's Point, a distance of eight or ten miles. Having so marked a guide for examination as this earth presented, I found gypsum in it in various places, but in such small quantities, that alone it would never have attracted observation. It was evident that gypsum either was, or had been at some former time, diffused through the whole body of this earth, and therefore I distinguish it by the general name of *gypseous earth*, although in most cases there may be no gypsum now remaining. This term of course is not always indicative of the present constitution of the mass. The gypseous earth is of a dull greenish color, mottled with streaks of bright yellow clay. Where gypsum is visible, it is generally in numerous small crystals; sometimes in coarse white powder. At one spot only (where first discovered) are the crystals large. Here they are sometimes

several pounds in weight, and of various and beautiful forms. Some are as transparent as glass; but generally, they are of a dark grey color, owing to a small quantity of dark earthy particles being enclosed between the *laminae* of the crystals. Except at this place, the solid crystals seldom exceed ten or twelve grains in weight, and generally are less than one grain. The most usual appearance in which they are presented on the bank, is that of a star, formed by numerous rays (each a solid crystal) shooting out from a common centre. As these rays are very slightly attached to each other, they generally fall asunder when removed.

In much the greater part of the gypseous earth which has been yet examined, no gypsum is visible; nor is it believed that even the smallest particle remains. But whether gypsum is present or not, the earth is filled with numerous hollow forms or impressions of shells, so as to prove that this was once part of a bank of fossil shells, (or marl as it is here called,) of which the upper part, unchanged, still forms the cover of the gypseous earth, through its whole extent. The yellow clay, before spoken of, is very often presented in the form of shells, as if when fluid, it had filled their vacant places. Masses of hard marl, coated over with crystallized gypsum, are also found here and there in the gypseous earth. A close examination of the bed, and comparing the impressions of shells with the appearance of those still existing in the upper stratum, or in the neighborhood, will leave no doubt on the mind of the observer, of the change having taken place from a bed of fossil shells to gypseous earth.

This conclusion is attended with two difficulties: In the first place, we are at a loss to know by what agency or means could so extensive, regular, and complete a chemical change have been made, as converting all the shelly matter (carbonate of lime) to gypsum, (sulphate of lime.) Secondly, admitting the means to exist, and the change to have taken place, it is still more difficult to guess what has become of the gypsum so formed—as not one-tenth of its proper quantity remains. When sulphuric acid takes the place of carbonic acid, in combination with lime, the greater weight of the former (together with the water chemically combined) serves to increase the weight of the new compound about fifty per cent. or, in other words, one hundred grains of shells, or pure calcareous earth, if allowed to combine with sulphuric acid, will form at least one hundred and fifty grains of gypsum. So the mere change of acids being made, ought to give us an earth much richer in gypsum than it before was in calcareous matter. Instead of this, the gypsum is no where so plenty as we may suppose the shells formerly were; and by far the greater part of this bed now is entirely destitute of both gypsum and calcareous earth. What has become of it is beyond my power to explain.

The access of waters containing sulphuric acid, or sulphate of iron, would suffice to produce the change of carbonate to sulphate of lime—and the exposure to sufficient water, and for sufficient time, might dissolve and carry off the greater part of the gypsum. Sulphate of iron is perceptible on the surface of some of this earth near the head of tidewater on Powell's creek, and was abundant enough to greatly injure the land on which some of this earth was applied thickly, for manure. Sulphuret of iron has also been found intermixed with the gypseous earth; and this mineral in contact with carbonate of lime, would also by chemical decomposition and new combination, form gypsum. It was at Berkley, in Charles city, that sulphuret of iron was found by Mr. Benjamin Harrison, near the bottom of a pit of thirty-six feet depth, which he caused to be sunk in the beach and through gypseous earth. Many isolated masses of marl were reached, (such as I described above,) and Mr. H. thinks that the gypseous earth also was still calcareous. In either case, the chemical change from the carbonate to the sulphate of lime must be still going

on, as the agent, sulphuret of iron, still remained in considerable quantity.

The discovery of the existence of gypsum caused the hope to be entertained at first that it would be found in large bodies, and pure enough to form a valuable commodity for sale, and distant transportation. But the examination which led to the foregoing conclusions, also served to dissipate these expectations. As the shelly bed which was the origin of the gypseous earth, was composed principally of worthless sand and clay, the new gypseous formation must have the same degree of adulteration, which would forbid its sale for transportation.

The only remaining use for the application of the new discovery, was as manure in the neighborhood where it was found; and circumstances then existing, and opinions almost universally entertained, prevented much profit being expected from this source, and discouraged even the experiments necessary to test fully the value of the earth as manure. These circumstances and opinions will be stated.

When the wonderful effects of gypsum as manure in Pennsylvania, and in parts of the mountainous region of Virginia, were first made known, the reports excited as much of incredulity, as astonishment, or of hope to reap the same rewards. But as a few pounds of pulverized gypsum were sufficient for the purpose, almost every farmer in lower Virginia, who was either enterprising or inquisitive, made some small applications for experiment. This was thirty-five or forty years ago, and perhaps there was not one of these experiments recorded, or the precise result kept in remembrance. But as to the *general* result, there could be no mistake. The failure was so general, that every one of the experimenters agreed that gypsum was worthless in lower Virginia, and in that opinion all others concurred. Some marked instances of success presented on Berkley in Charles city, Curle's, Brandon, and some other fine soils on James river, when the use of gypsum was resumed fifteen or twenty years after, did not shake the opinion of the general unfitness of our land for that manure. In this opinion I fully concurred—and of course could not expect to find our own impure gypseous earth more efficacious, than the purer substance from France or Nova Scotia.

But without expecting profit from the manure, the desire to prove its identity with gypsum caused me to make many small experiments with the pounded crystals, and with the earth in which they were found, in 1817, and afterwards. The results were not such as to promise profit from the extended use, but served to remove all remaining doubt as to the nature of the substance. On the several kinds of clover it sometimes produced remarkable benefit—but more generally, very little. On corn, it was totally inert, except in a very few cases, and in one of these exceptions, the benefit was remarkable. On other grain crops, no effect was ever found. These very different effects, instead of being imputed to the nature of the soil, and the crop, (as I have since ascertained to be the true causes,) were supposed to be evidences of the capricious manner in which this manure acted, and of its general worthlessness for this region. I saw indeed that its best effect was on calcareous soil—and even then began to entertain the opinion which since has been established by facts, that the want of calcareous ingredients in our soils, caused their unfitness to be improved by gypsum. I felt the less inducement however to continue my applications, because my own gypseous earth was poor, and limited in quantity; and I wished to reserve what there was of it for future use, when my land should be made calcareous, and more fit for clover. For these reasons, my use of the gypseous earth was almost abandoned for six or seven years, and no other person had then made any experiments to test its value as manure.

In the winter of 182—6, I found, on my land, a small body of gypseous earth containing at least one-tenth of pure gypsum on the average—and portions of

it had as much as one-fourth. This caused me to resume its use. In 1826, 565 heaped bushels were applied, about 20 to the acre, (supposed to give from 2 to 3 of pure gypsum,) to various soils, and to different crops. In 1827, between 7 and 800 bushels were applied. The effect on clover, on land calcareous by nature, or made so by art, was as great generally as gypsum has ever produced elsewhere. On cotton, and on corn, the effects were irregular, and taken altogether, were not equal to the cost of the application. But though the use of this earth was now confined to land made calcareous, (as it was evidently worthless elsewhere,) I again lost the greater part of its value by another improper mode of application, which it may be useful to others to state more fully.

Judge Peters, to whom we are indebted for making known and establishing the value of gypsum, was of opinion that one of its operations is to hasten the rotting of vegetable matter with which it is in contact; and thence he deduced the opinion of the propriety of mixing gypsum in heaps of compost, or of other coarse putrescent manure. Besides gaining this particular benefit from mixing the gypseous earth with my stable and farm yard manures, (which I was ready to believe on the high authority of Judge Peters,) I expected to derive from that practice a still greater benefit in distributing easily and equally the earth over the land, which was very troublesome to spread alone. For these reasons, the greater part of my gypseous earth was spread over the litter in the farm yard and stable, in such quantities as was supposed would give about 20 bushels of the earth to every acre covered by the manure. The heaping of the manure to ferment, then cutting it down to load, and spreading it over the field, no doubt divided and distributed the gypseous earth very equally. It showed no effect on the succeeding crop, corn, (at least none that could be distinguished from that of the putrescent manure,) and none on the wheat, which followed. I had not expected much better results on these crops, but relied confidently that my clover, sown on the wheat, would show the effect of the gypseous earth equal to any on other land, where it had been applied alone. In this I was totally disappointed. Not the least effect of gypsum could be discovered on the clover—and thus the whole of this application was thrown away, as well as the greater part of the succeeding winter's application, which in like manner had been mixed with my other manure, and which had not then arrived at the time to prove its uselessness. The cause of this inefficiency is now plain enough. Fermenting manure (and probably all fermenting vegetable matter) forms *oxalic acid*, which attracts lime so powerfully as to take it from all other combinations in which it can be presented. This acid thus meeting with the sulphate of lime in the gypseous earth, at once decomposed it, and destroyed the peculiar manure before existing. No particle of gypsum remained to be carried out, and act on the land. It is useless here to extend my remarks on this operation of oxalic acid, as it has been done at length elsewhere; it is sufficient to show by this statement that my obstinate adherence to this mode of application, for two winters, caused the loss of the greater part of gypseous earth, as well as the labor of applying it. The rich seam was by that time exhausted, and my later use has been with the poorer body, which, it is possible, may not be cheaper than to buy the imported gypsum. However, within the last year, my friend and neighbor Thomas Cocke of Tarbay, by applying earth apparently still poorer in gypsum, has produced such remarkable benefit on clover, that I am encouraged to return again to this kind of manure. The earth he uses is brown, and differs much from the general appearance as described above. We are both satisfied that the gypseous earth possesses some power to aid the growth of clover, independent of the pure gypsum contained. Last year (1832) to test this opinion, I

sowed French gypsum on clover at the different rates of 1, 2, 3 and 4 bushels to the acre on marked spaces. The benefit of the smallest application doubled the crop of clover—and it was increased by the heavier dressing, though not at all proportioned to the quantities applied. But the clover on the heaviest application (of four bushels) was not to compare to the effect seen on neighboring and similar land, from twenty bushels of my best gypseous earth, and which was not greater than had often been found elsewhere. Mr. Cocke finds equal benefit, on clover made on poor light land, (that is, it is made as heavy as it can well stand,) from forty bushels of his earth which appears so poor. It is necessary to observe that all these instances of benefit are on land made calcareous by fossil shells; and on my own, last spoken of, before that operation, the gypseous earth had been used, in heavy as well as light applications, and without the least effect. The very rich bed of gypseous earth at Evergreen has only just now been opened for use.

The statements made of my own practice show that I cannot boast of having derived much (if any) profit from the use of gypseous earth. Nevertheless, my experience may be more useful to others than it has been to myself, and the misapplications caused by my inexperience and ignorance may serve to show others, who have access to such manure, how to make proper use of it. Within the last year, circumstances have attracted attention, and been made public, which induce the belief that this formation of gypseous earth is much more extensive than was before supposed. The marl beds in Hanover and Henrico, not far below the granite ridge, are covered by an upper bed of clay, which is very different in appearance from our gypseous earth, but agrees with it in being full of impressions of shells, and being destitute of any portion of the carbonate of lime, with which it was evidently so well furnished at some former time. No gypsum is visible. This earth also differs from that of Prince George in containing pure sulphur generally diffused throughout, as made evident by its strong sulphureous scent. I do not know that this singular and extensive formation is valuable as manure—but it is at least worth examination and trial. The clay bank through which Governor's street in Richmond is cut, is full of such impressions of shells, though it does not contain, and is not known even to cover, any remaining calcareous matter. If shells are below, as is probable, this is very near their termination in this direction.

In the bed of Howard's creek, at the point where it flows nearest to the White Sulphur Spring, (within a few hundred yards distance,) there are many pebbles, varying greatly in form, appearance, and chemical composition, but agreeing in containing (like the earth before described) numerous hollow forms of small shells, of which nothing of the substance now remains, nor any trace of carbonate of lime. These stones are as solid and hard as those of similar external appearance usually are, which makes still more strange and unaccountable the entire disappearance of the shells which have at a former time been enclosed. I have mentioned this fact because it may possibly attract the attention of some of the men of science who visit that place, and induce them to observe and explain these singular facts. The silicious fixed rocks lying close by the Sulphur Spring also have many star-like impressions on their surfaces, (but not within, as in the other cases,) which from their similarity and regularity of form, must have been caused by small shells of one particular species. I found a similar impression on a pebble in the bed of the Calf Pasture River—and perhaps such facts may be numerous, and well known to others. In all these cases, there was not the least particle of carbonate of lime remaining in these stones, (as proved by chemical tests,) nor any appearance (to the eye) of any other salt of lime, to which the carbonate might have been changed.

The high land which lies over the whole extent of the gypseous formation in Prince George presents a surface and qualities of very peculiar appearance, and

which may possibly have some connection with the gypseous bed below. If so, my description may direct more successfully the search for gypseous earth elsewhere. The land from Bayley's creek to Coggin's Point, except where interrupted by some low alluvial tracts, seems as if it had been originally a high and level bluff, or abrupt termination of table land, which had sunk in successive sheets, the lowest next the river, so as now to present somewhat the appearance of a hill side cut into terraces. Of course, this form is extremely irregular. The broken strata cause the greatest variety of surface; fossil shells fit for use as manure, barren clay, barren calcareous sand, and rich black soil, were all to be found in almost every acre, and remained distinct, until mixed by the cultivation of the surface. It does not rest on mere conjecture that this land took its present form and depression by sinking or *slipping*, as a similar natural operation to considerable extent, has taken place on the Tarbay farm within a few years, the progress and consequences of which are still visible.

The rich gypseous bank, at Evergreen, is at a place where the river is encroaching on the land, and every storm, or very high tide, adds to the acres which have doubtless been already swept away. In this manner was formerly exposed the remains of the trunk of a tree, lying even with the beach, and which when wet, presented the same spongy and soft texture on the surface, smooth and even yielding to the touch, as is usually seen in rotten and water-soaked logs. But except the surface, where water had probably dissolved the substance, every pore and cell of the log was filled with gypsum, though the form and grain of wood remained distinct. This complete filling of the cells could only have taken place when the gypsum was in a fluid state. The circumstance of a tree being found beneath a bank of shells, or what had been shells, might seem to be a proof that the shells were the later deposit of the two. But it is easier to believe that the whole body of earth, (though perhaps fifty feet high) was formerly thrown into its present place, by one of those land-slips which have been already spoken of.

There is a kind of earth in New Jersey which was called *marl*, (as almost every earthy manure has been,) but which seemed to me, from the imperfect descriptions given of it, to be the same kind of gypseous earth that I have described. Although this Jersey manure excited attention, and was bought, and tried, and reported on, by Judge Peters, there was no certain indication given to the public of the component parts of the earth, or what constituted its fertilizing power. Judge Peters speaks thus of it: "It is said by some that the *Jersey pyritous earth*, called *marl*, is of this description; [i. e. a mere stimulant:] and by others that it is permanently fertilizing. Nothing decisive can yet be pronounced, as its many varieties differ in their respective effects. There are facts both ways; so that this earth when applied, and the soil it is intended to assist, should be carefully scrutinized, and the qualities practically known. Some English chemists to whom it has been sent, style it an *Hydrate of iron*; while others designate its composition, as a collection of decomposed *granite, schorl, silica, alumina, iron*; in some specimens, (no doubt those mixed with shells,) *lime* and *magarsia*, with *sulphur*. A more accurate knowledge of its parts and properties, is still required; and it is to be wished that our own chemists will give us their assistance. *Broom grass* and other pests on worn lands, may be destroyed by a top dressing of this earth and chloritic sands of a similar, though not so potent a nature, which substitute a natural growth of white clover." In a communication of later date, Judge Peters made the following incidental remarks: "Four years ago, I procured forty tons of Jersey manure, and spread it as a top-dressing on many parts of the Belmont farm, on sand, clay, loam, and in every

* Essay on Calcareous Manures, pp. 143 and 224.

* Notices for a Young Farmer—by Judge Peter. Phil. Memoirs, vol. 4.

variety of exposure, as well as on moist and dry grounds. But in no instance any profitable effect appeared. A broad strip of the lawn, light and sandy, had been top dressed, and showed no signs of melioration heretofore. This strip is part of my little oat field; and it has [this year] thrown up a most luxuriant growth, far exceeding any other part, (though the whole was good, having been well limed throughout,) and affords a proof that this manure agrees with and co-operates with lime. I never saw, in the richest soil, stronger, better headed, or more promising plants. It would have been incompatible with my objects, or I should have suffered it to ripen, for experiment of its product. Mr. Mark Reeve, who is very intelligent on this subject, (and to whom I sent a sample of the manure,) informed me that I had been imposed on by the person from whom I procured it; the article used by me being only the cover of the true kind. Its effect, luxuriant as it is, must have been more so, if the perfect manure had been used.* I have seen it stated elsewhere, (though I am not able now to refer to the authority,) that the Jersey earth was particularly beneficial to clover, and that it was used in small quantities, compared with other manures.

The description of the Jersey earth, and the effects imputed to its use, agree very closely with those of our gypsous earth. But it also seems, that no one entertained a suspicion that its value was owing to its containing, or forming gypsum. I therefore infer that the earth there used was similar to the great body and poorest kind of ours, having not a particle of gypsum remaining. If so, the effects produced as manure, were probably owing to either *sulphate of iron*, or *sulphuret of iron* remaining in excess in the earth—which, when meeting with lime in the soil, formed gypsum—and if no lime was present, remained either (as the *sulphuret*) an inert, or (as the *sulphate of iron*) a poisonous ingredient of the soil. *Iron pyrites* (sulphuret of iron) have been used with much benefit as manure—though that effect would probably depend on whether the soil was calcareous or otherwise.

From the publication of the passages quoted above, and many others on the same manure that appeared about 1819, and soon after, it might be supposed that the attention and labors of chemists would have been drawn to this manure, and its composition and value clearly settled; and that practical farmers would have fully profited by this instruction. On the contrary, all notice of the manure soon ceased, and no information thereon has since been given to the public. It may therefore be inferred that the manure was used so ignorantly, as not to be found profitable in general, and that even the solicitations of Judge Peters, and the influence of his venerable name, could not obtain this small aid from men of science, which might have shown when and why the manure was useful, or otherwise. If my views of its constitution are not mistaken, it is certain that this manure will be found useless on most poor soils, unless calcareous earth is used previously, or in conjunction.

EDMUND RUFFIN.

(From the Genesee Farmer.)

ON THE EXTIRPATION OF WEEDS.

Greatfield, 8 mo. 17, 1833.

In this neighborhood there is no weed which requires more immediate attention than the St. John's wort, (*Hypericum perforatum*.) remarkable for its bright yellow flowers. From the disregard that has been shown to its progress, there is a prospect of its soon occupying most of the fields, pastures, meadows, and way sides, in this quarter; and farmers cannot be too soon aroused to a sense of their danger. It is a most pernicious weed. Mixed with grass seeds, it may spread rapidly over a farm; but in ordinary cases, its advances are gradual, allowing the farmer who has any choice between wholesome grass and noxious

weeds, an opportunity to root it out with very little trouble or expense. It will require both, however, with much perseverance when it has once obtained full possession of a field.

The great increase of weeds amongst us within the last twenty years, indicates the propriety of carefully examining all seeds before sowing, which are not known to be clean; and in addition to this caution, every farmer who wishes to keep his lands free from St. John's wort, ought to use neither hay nor grass seed which has grown on a farm infested by this weed.

To show the opinions entertained of it, by those who have had long experience of its deleterious qualities, I give the following extracts from writers of the first reputation:

H. perforatum. "Too abundantly naturalized in dry pastures, and considered very injurious to horses." Professor Nuttall: Genera of North American Plants.

"This plant has become a most pestiferous weed, every where throughout the Union, [below the mountains.] It is accused of injuring horses. Introduced originally from Europe. In fields, and by road and fence sides, every where unfortunately abundant." Professor Barton: Compendium Florae Philadelphiae.

This is a forerunner, and a pernicious weed in our pastures: often producing troublesome scabious sores upon horses and horned cattle, when it comes in contact with them—especially those which are white, or have white feet and noses.—It would seem that the dew which collects on the plant, becomes active in this way. I have seen the backs of white cows covered with sores, wherever the bushy ends of their tails had been applied, after dragging through the St. John's wort." Dr. Darlington: Florida Cestrica.

D. T.

(From the Farmers' Register.)

HINTS ON MARLING, AND MANAGEMENT OF HORSES.
MR. EDITOR Essex County, Va. July, 1833.

Many years past I read a piece written by you, in the American Farmer, on the use of marl, but its importance never presented itself to my mind forcibly enough to induce me to use it, before I heard you had published an "Essay on Calcareous Manures." I then re-examined your piece and the writings of others that had written on the use of lime, and commenced marling a few days before I saw your essay.

I had long known of three beds of marl upon a farm I own, and wishing to examine for more, an inquiry was made of such of my acquaintances as it was thought most likely could give information, how an auger should be made to bore for marl; but being unable to obtain the least information, a trial was made to get one from Richmond, which proved ineffectual. Finding I should have to make one for myself, the idea suggested itself to my mind that a common barrel inch auger would do, by grinding off the end in the shape of a gouge; but on trial it was found the earth slipped out of the barrel as it was pulled up: the barrel was then measured and found to be rather larger at bottom than at top. An auger was then made with the barrel rather smaller at bottom than at top, so as to prevent the earth from slipping out, and found to answer very well in most soils. The three first augers made were inch augers, and three, six and nine feet in length, so as to follow each other, but on trial they were not found to answer well. Being of the same size they were inconvenient to get in and out. The length of the first answered, as the earth was soft near the surface, but three feet for the handle of either of the others above ground was found laborious to begin with. They were therefore altered: the size of the first remained 1 inch, the second rather smaller, and the third still smaller, the lengths 3, 5½ and 8 feet, which answered much better. The length of the barrel should be from three to four inches, the back about one-eighth of an inch thick, but thinner on the sides and near the end, the rod should be made of round

rod iron half an inch in diameter. One dollar will purchase as much round rod iron as will make the three augers: the cost of making will probably be about one dollar. The iron, when the augers are no longer wanting, will be worth about one dollar. We use three augers to look for marl, but keep longer ones at the pit to bore through and through a bed before a pit is dug, for fear of losing time and labor. In some soils considerable labor is required to bore, in others but little. We have found a good many beds, by boring, that had never been known before.

We had never marled before last winter, nor seen any marl; and had every thing to learn.—We soon found we wanted a pump, but what size we did not know. One was ordered, but proved too large: another was ordered to be made as light as possible with an inch and a half bore, and to have an iron band at the lower end as well as at the top and middle, to prevent its splitting from drying when out of the water. This was found to answer very well. We commenced digging marl with grubbing hoes, which was found tedious and laborious: we then made grubbing hoes or picks, with blades only two inches wide: with these the laborers were greatly pleased, and said the labor was not half as great. Another thing required attention. The laborers threw the marl out of the pit with hoes and spades, as the carts could not conveniently descend into the pit: the hoe was tedious, and the spade required stooping, which was painful and laborious, to obviate which socket shovels were obtained, and handles got from the woods of the size and form supposed most suitable, with some of which the laborers were pleased, but it was evident there was room for great improvement. A pattern was therefore made and taken to the woods, and a suitable tree selected: the handles were then sawed out four and a half feet in length and about the size of a weeding hoe handle, but rather larger one way than the other, and dressed off rather of an oval form like the handle of an axe, or grubbing hoe, to prevent their turning in the hand: thus made and properly put into the socket the laborer consols his own ease, and throws in any direction that suits his convenience, and frequently, directly over head. In using it, the left foot comes within about a foot of the shovel, the handle passes by the left knee and about eight inches above the right knee. Probably the most convenient way to make a pattern to get the handles by, is to take a thin piece of plank four and a half feet long, and five inches wide, and to lay the shovel on the back with the socket end a little elevated, and to cut the plank to fit the socket, which will take in length six inches. When fitted, cut the superfluous plank on the upper side away in a circular manner from the socket to near the left knee; at the left knee, none is to be taken off on the upper side, but all from the under side in a circular manner; then from about the left knee on the upper side, take it off to the lower corner of the upper end, in a circular manner.

While these improvements for the relief of the laborers were going on, the oxen were suffering greatly. The cart bodies were too large and heavy, and the oxen were frequently overloaded; to obviate which, bodies were made of light timber to hold about fifteen bushels. But we were at a great loss how to fix the body conveniently to keep it from being thrown off in turning up, as it was too short to rest on the ground, but at last a simple plan answered exactly. A two inch hole was cut through the cart axle, and a little piece of timber put into the hole to strike the middle sill of the cart, and so fixed as to slip in and out at pleasure.

We marled during the winter about one hundred acres of land, 250 bushels to the acre, in strength from .50 to .60 of carbonate of lime.—The marl used was of the large white shell, imbedded in what is called blue clay, but more properly a mixture of fine blue sand and clay. We have a good deal of "little shell" marl, which is in strength only about half that of the large shell. I am not sure that drying and weighing

*Phil. Memoirs, vol. 4.

marl before analyzing, is that perfect way of knowing its calcareous value for agricultural purposes as is generally supposed: for marl is carried from the bed in the state it is there found, and there is no earth below the surface perfectly dry. Given weights of earth from different soils, when wet, vary very widely after drying. We see in our branches, sand that loses but little by drying, and along side, we see earth thrown out of our ditches, that was heavy like the sand, but when dry, is as light as ashes. Evaporation makes this important difference. I should therefore suppose marl containing the most calcareous earth in proportion to its weight at the bed, to be the most profitable; and not the one giving the most, when analyzed, in proportion to its dry weight. For example, say there are two beds of marl, one as it is dug from the bed, contains, in one hundred parts, of lime .25, of sand .50, of water .25; the other bed is of lime .25, of earth when dry almost as light as ashes .25, of water .50; these two beds as far as respects the calcareous matter is the same, and whether .50 of sand or .50 of water be carried out is immaterial. But how different would be the result if analyzed: one would lose .25 of water by evaporation, the other would lose .50 of water by evaporation. The balance, in one case, would be one-third lime, the other one-half—instead of both being the same and that only one-fourth. Not many days ago I received some marl from an adjoining county which I think would have been by analysis .80 by first drying it; but I doubt, from the soil it was imbedded in, whether it would have reached .40 as taken from the bed. I have analyzed a good deal of marl (without an apparatus, but) agreeable to the directions given in your "Essay on Calcareous Manures," and I find from good beds of marl, samples can be selected to show by analysis almost any thing.

It was not my intention when I began this communication to write one-tenth as much as I have—however, I will merely touch one or two other subjects. While writing this letter, my attention was arrested by a person calling to another to run and prevent a horse from breaking his bridle, that he had just been tied by. I will therefore state how I broke a valuable mare from that habit a few years ago. I came home one day and tied her, and had scarcely reached my door before she broke a new bridle into three parts, and ran off. I ordered her to be brought back, and after some reflection, I cut a piece of leather about four inches long and about as wide as the head stall, and drove two rows of small nails through: while this was fixing, I ordered a small pad to be made about the size of the leather, and filled it with wool: I then pressed the points of the nails into the pad, and put the leather under the head stall, and walked off. She gave a sudden jerk to clear herself from the bridle, which forced the nails through the pad into her head, after which she made one or two slight efforts, and stood still. I then took a horsewhip and gave her several cuts, but she would not break away: she appeared more afraid of the nails coming in contact with her head than she was of the whip. After this, when I tied her, for two or three times, I slipped the pad and leather under the head stall, which effectually broke her; and since, I have broken another in the same way.—Both of these were young beginners; but I imagine that old offenders can be broken in the same way. This can be used to make a horse lead into a place or pass a fence or ditch which otherwise he would be unwilling to do.

As it is now the time for getting out wheat, and all have not wheat machines, a remark on that subject may be not out of season. I am inclined to believe that horses are frequently seriously injured in treading wheat by coupling them together by the mouth, they are continually jerking each other. Mason in his "Farrier" says "a rider who is compelled to perform a long journey in haste and with certainty, in a given time, should be extremely particular in his manner of riding. He should bear lightly and steadily on his bridle and stirrups, never jerking, checking

or stopping his horse suddenly, or change his gaits too frequently; all these things have a tendency to weaken and fatigue a horse extremely." This can be obviated in a very great degree by throwing the bridle of the second horse over the neck of the first, and the bridle of the third horse over the neck of the second, and so on: then with a rein attached to the bit of the first horse, the driver can stand in the middle of the ring, and drive around. Thus fixed, a small boy has more command over his horses, than a man has, when they are coupled mouth to mouth: but I should not suppose more than two horses ought to run abreast. Running four abreast to save the labor of a hand, is like calculating present profit, without regard to future loss. The last time I saw four horses running abreast, they were coupled mouth to mouth, they were jerking each other, and throwing their heads in every direction, their mouths were frequently suddenly thrown open and the slaver thrown from their knees to their eyes; and though it was early in the day, they appeared quite exhausted. Had they been fixed as here recommended, I have no doubt at that early hour, they would have been running fresh and strong.

EDMUND F. NOEL

The minuteness of detail in the foregoing communication is especially worthy of notice, and of imitation. Descriptions and instructions on agricultural subjects, cannot be made too plain—and for want of enough minuteness and fulness of detail, many valuable pieces lose half their value. The oldest marler may gain some useful hint from Mr. Noel's observations, and the inexperienced, much more. Every fact learned by experience, by which even a little labor may be saved, or a small loss avoided, is worth being communicated, and will be both acceptable and valuable to our readers.

We presume that Mr. N. does not question the correctness of the result obtained from the analysis of any particular specimen of marl, when he states (and very truly) that analysis does not show its true strength, as it is carried from the pit to the field. The degree of wetness should not only be considered, but also several other circumstances, which greatly affect the value of marl as manure. Large shells—hard shells—stone (though calcareous) lumps, not capable of being reduced by the action of frost, &c. all manifestly cause the manure to be less operative, than when no such objections exist, and there is the same proportion of carbonate of lime, in a finely divided state. But still, the only foundation on which to erect a correct estimate of the value of a body of marl, is to learn, by analyzing fair samples, the actual calcareous contents: and then all other matters affecting value and early operation, may be estimated with sufficient accuracy.—*Ed. Far. Reg.*

(From the Farmers' Register.)

NARROW LEAFED DOCK, A FERTILIZER OF LAND.

Dock has, so far as my experience extends, been regarded as a nuisance to land, and all good farmers were required to wage constant war against it; and perhaps it is right that they should be vigilant in its extirpation from other crops: but I am satisfied we have not under our control a more powerful restorer of worn out land.

In a piece of my meadow, I discovered a large portion of dock, and to prevent its taking entire possession of it, I had all the stems pulled up before I thought they were ripe; but in this I was mistaken, for I afterwards discovered that the ground upon which they were deposited, (a poor sandy worn out bottom, that would not bring me the seed of any thing I had put in it,) sent up a most tremendous crop of docks, which I had mowed down rather earlier than I had them pulled up the year previous, and while they were much greener: but I was again disappointed, for the seed had matured more than I had supposed, and another bountiful crop was the result. Next spring and summer, to prevent the dock from spreading, I

ploughed the ground three times, turning under the green dock which killed all effectually: I spread lightly some timothy hay upon this spot in August, and this month I obtained from this spot which I regarded as worthless, the heaviest crop of grass I ever saw cut. This suggests this query—would not dock be a powerful assistant in restoring the exhausted bottoms of Eastern Virginia? Its long and wide spreading roots would, I am conscious, bring the strength from below, where our best ploughs reach, and deposit it on the surface: it produces a large quantity of seed, which is easily collected; and dock is quite easily conquered, if taken in any stage previous to its blossoming, but afterwards it cannot be managed well.

J. F. CALDWELL.

HORTICULTURE.

(From the London Horticultural Register.)

METHOD FOR GENERATING NEW VARIETIES OF FRUIT.

After selecting a few conveniently situated branchlets, in different parts of a tree, I remove all the blossoms, with the exception of three or four of the most promising, from which, a day or two before their expansion, I extract the anthers with a small pair of scissors, or tweezers, and cover each branchlet with a piece of thin gauze, taking care that no opening be left by which bees, flies, or other insects, might gain admission, and thereby mar the experiment by bearing to the stigma the pollen of some variety other than than the one I may desire to employ. The gauze should also be rendered secure, so that the wind may not partially open it, nor entirely carry it away. When the blossoms are fully expanded, and the stigma, by bursting, is ready to receive the influence of the pollen, it must be supplied by the application of a flower of whatever variety has been fixed upon as the male parent, and the gauze replaced till the fruit is set. As the fruit increases in size, if more than one or two remain, judge which gives the best promise of attaining perfection, and the rest remove; it will be advisable to distinguish each branch by a label affixed. The above, or some similar method, alone can determine, with any certainty, which is the male parent; or, indeed, there may be many, which accounts for the diversity of the products obtained from seeds of the same individual fruit.

Last year I gathered the first produce of some seedling strawberries, raised by cross fertilization in a similar manner; and am looking forward to the result of subsequent experiments, which, from the success I have already attained, leads me to believe, will prove highly satisfactory. Two or three of the varieties obtained, (but one more especially,) possess excellent properties of growth, fecundity, and flavor, and differ remarkably from any previous one which has come under my observation.

Throughout the vegetable kingdom, it is found that there is a certain point or degree of ramification, more or less in different individual members, removed from the parent stem, previous to the attainment of which, a plant is incapable of putting forth fruit blossoms; the cause of this it were difficult to explain satisfactorily. Having ascertained the numerical amount of this requisite degree of ramification, in conjunction with a knowledge of the habits of the plants, as to the number of successive shoots it protrudes in the course of the year, we may form a pretty accurate estimate of the length of time required before it shall attain to a fruit-bearing state.

Thus, other circumstances remaining the same, the oak, did it not send forth two shoots, the one in spring, the other in autumn, would be double the long period it now is, ere it began to produce acorns. The exact number, however, cannot be ascertained, since all traces by which they might be computed, are, in the older portions of the wood, entirely lost. It is by

earlier inducing *this* degree in the melon, which is generally the second from the main stem, that the pruning, or stopping, is effective towards the accelerating of the emission of fruit blossoms.

In the apple the twelfth, and the pear the eighteenth, are about the minimum number of degrees of ramification distant from the parent stem, that are required, ere flowers are put forth; that period, however, is often protracted. In computing these numbers, a shoot, succeeding after a quiescent period, whether still projected in a line with the older wood, or at an angle from it, is equally considered as a distinct branch; there is, indeed, a knot at the junction, as much of the one as the other; and it is the number of these knots, by retarding the flow, or causing the accumulation of the sap, which would appear to bear some part in effecting a fruitful state. From these circumstances, the inference to be drawn is, that if we can cause the formation of three or four successive shoots in the course of the year, instead of one, or at the most two, (as would be the case, were the tree left to its natural growth,) that we shall thereby anticipate, by a half or two thirds, the usual period of fructification.

With this aim, then it will be necessary to maintain the young seedlings, by due care and judicious culture, in a vigorously growing state, and two or three times, or even oftener, as the circumstances may warrant, nip off or prune back the leading shoot, whereby, at each operation, a new branch will be protruded, which otherwise would not have been the case, until the succeeding spring. By a continued repetition, however, of these operations, an inconvenient number of diverging shoots will also be excited; consequently, attention must be paid to regulating their number, by disbudbing the branches accordingly, which will also infuse more vigor into those remaining. It will not be advisable to continue the stopping far into the season, otherwise the young wood will not have time to ripen; and the frosts of winter, by killing the new-formed portions, will counteract the advantage obtained. By duly following this method, the usual period of fructification will be shortened with the apple, to and from the fifth to the seventh year, instead of the twelfth to the twentieth, and the pear in like proportion.

RURAL ECONOMY.

(From the Petersburg Intelligencer.)

COTTON SEED OIL.

MESSRS. EDITORS: Petersburg, September 5, 1833.

We have received a communication from A. S. Clayton, under the head of *cotton seed oil*, dated Athens, July 30, 1833, giving a pompous account of a machine for hulling cotton seed, said to be invented by a Mr. Lancelot Johnson—which machine, we understand, has *five thousand* cast steel teeth!—truly, a very formidable number. Notwithstanding Mr. Clayton pronounces this machine to be as *perfect* as possible, we feel no disposition to enter into a discussion of its merits, fully satisfied, from the description given of it, that after a full trial of its utility, it will meet the same fate as the several previous and futile attempts to deprive us of the benefits of our invention.

Our machine which has been described by Mr. Clayton, as the rough stone cylinder, &c. in Virginia, is quite toothless and harmless, and we will engage it will do no hurt but much good, to all who know, and are able to make a good use of it, and has long ago sounded its own praise by *works*, and not by *puffs*. Notwithstanding the attempt made to tarnish its reputation, we say it executes its work in every respect, in the best possible manner; and that it is a well constructed, substantial, compact, durable article, and not easily put out of order. The largest size we use will get out, when properly attended, at least sixty bushels of kernel, in ten working hours, (without having the

fibre and hull mashed into the kernel, as represented by Mr. Clayton,) which is more than double the quantity required for one oil press; and if a machine is wanted to do double the above quantity of work, we can furnish it. Mr. Clayton's attempt to place to the credit of Mr. Johnson, what justly belongs to us, and to his own credit what as justly belongs to our late worthy and highly respected and lamented friend, Gen. D. R. Williams, of South Carolina, does not a little surprise us. We hope he will have the liberality, after perusing the annexed extract of a letter from that gentleman to us, under date of the 13th of May, 1830, to transfer the credit he has misplaced, to their proper accounts, and add to the same accounts, all the correct information he has given respecting the oil cake, &c. &c. as originating from the same sources. We regret that the statement is not true, viz. that cotton seed oil is worth one dollar per gallon, in the New York and Philadelphia markets—also, the oil cake one dollar per cwt.; and we should be glad to make a contract with the gentleman for several hundred barrels of the oil, at 66½ cents per gallon—and also, for 100,000 cwt. of the oil cake at 75 cents per 100 cwt.; and neither is it true, that the oil and oil cake, are worth half as much as the cotton, but is still very valuable, when manufactured into oil, in a proper manner.

We have annexed, the certificates of several of the most respectable gentlemen of South Carolina, showing the operation, and their opinion of our machine, its utility, &c. which you will please re-publish, as well as our *old advertisement*, published in your paper, 23d of February, 1830, from which Mr. Clayton must have taken the information, which he has *trumpeted* forth as new to the public—except that of making cracklin bread, and polishing tortoise shells, with the oil, which may be something new, and entitle him to a patent for the discovery. We have had upwards of four years experience in this business—have erected three oil mills, on our own account, for making cotton seed oil, and several have been put up by others, and the business is progressing (with our machines) rapidly in the cotton growing states in the west. We worked one of our machines, in this town for three years, and it now performs with as much satisfaction as when first erected. And what better proof is wanted, of the efficiency of our machines? We have been unwarrantably dragged out, to make this communication, in vindication of our rights and our property, and all that we ask of a generous public, is to do us the justice we are entitled to, as *pioneers in this business*; which we have no doubt will eventually be worth some millions of dollars, to the cotton growing states.

FRANCIS FOLLETT,
JABEZ SMITH.

Columbia, S. C. Dec. 15, 1829.

The undersigned subscribers have examined and witnessed in operation, near the State House, by horse power, Messrs. Follett & Smith's patent cotton seed hulling machine, and have no hesitation in saying, that we were highly gratified, and admired the principle, construction and astonishing facility which the machine, when put in motion, by a single hand, will feed itself regularly, hull, riddle, fan and deliver the kernel nearly all whole, at one and the same operation, with the power of two horses; producing by this invention the long desired and important desideratum of completely separating the fibrous hull from the kernel of cotton seed, which we think promises a reasonable reward to the inventors and also to be of much importance to the country, and more particularly to the cotton growing states, and we understand the machine hulled a bushel of rough seed in less than three minutes.

Col. SAM'L. HAMMOND, *Surry's Gen'l.*
Jas. R. ERVIN, *Member of the Senate.*
Jas. C. COGGESHALL, *Legislature.*
JOHN MURDOCH, *ditto.*

Extract of a letter from General D. R. Williams to Messrs. Follett & Smith, Petersburg, Va.

Society Hill, May 13, 1830.

"Gentlemen,—Your favor reached me in due course of the mail. I have not replied earlier, because as our oil mill was so nearly finished, I preferred to delay the acknowledgment, till I could speak from facts, resulting from my own experiments; and although these have not been carried out as far as I propose, they are quite enough so, to satisfy my own mind fully. In relation to your 'cotton seed huller,' I am gratified to be able to say; it performs all that you have promised for it, and moreover, is so easily comprehended. Ours has been set up and put in operation by persons who never saw one before."

"You are aware that I attempted last winter to enlist the public generally, in favor of your invention, by a few pieces in the Columbia Telescope, signed 'A Cotton Planter.' These were founded on information, with which I had been favored. You may be certain of the satisfaction I feel in having tested by actual experiment, that all these statements were perfectly correct."

"If your invention could do nothing more than convert cotton seed into wholesome food for stock, it would still be, in my opinion, of infinite importance to the whole southern country. The planter who makes four bags of cotton to the hand, will now with your aid, have in addition to his grain, forty bushels of good food also per hand, more than equal to that quantity of oats."

MISCELLANEOUS.

(From the Harbinger.)

GAMA GRASS.

ITS CULTURE RECOMMENDED—WITH SOME REMARKS UPON THE GENUS *Tripsacum*, AND ITS SPECIES.

Norbern, Aug. 25, 1833.

The grass which passes under this popular name, and which is known to botanists under the names of *Tripsacum dactyloides*, and *T. monostachyon*, has acquired a considerable degree of celebrity, and promises to become of much value to the agricultural interests of the southern states. While the northern and western portions of our country are provided with a variety of valuable grasses, suited to their climate and soils, the *alluvial* portions of the southern states are entirely destitute of these useful auxiliaries, for, I believe, that in these, neither clover, timothy, herd's grass, orchard grass, nor any of those grasses derived from northern climates have proved, nor ever will prove extensively beneficial. The consequence is, that throughout this extensive portion of country, no hay is made, and the only native product relied on as provender for horses and other cattle is the dried blades of Indian corn. Hence the planter's stock is generally stunted during winter, and the products of his dairy rendered extremely meager; and butter, cheese, and even hay for horses, are imported from the north into the southern towns. On the contrary, the *guinea grass*, so much valued in the West India islands, would probably prove but an *annual* plant in this climate—that is the roots, as well as the stem and leaves, would die from the effects of frost. The same circumstance destroys the value of our *crab grass*, (*Digitaria sanguinalis*;) and our *crow foot grass*, (*Eleusine indica*;) for these are both *annuals*. They perish with the approach of winter, and are renewable only from the seed. Under these circumstances the gama grass presents unusual claims to our attention. It is a native of the alluvial soils of the southern states, grows well in every variety of soil, yields a most abundant crop, and is a *perennial* plant, that is, its roots preserve their vegetative powers through the winter, and the crop is renewed, for several successive years, without the necessity of replanting. The zealous advocates of this grass have assured us that

it will yield from 70 to 90 tons of green hay, or from 20 to 30 tons of cured hay to the acre. But if there should be any exaggeration in this, we may reduce the estimate *one-half*, and the produce will still remain ample enough to make its cultivation highly profitable. Ten tons of cured hay is equivalent to twenty-five ordinary stacks of our *folder*, and thus the product of five acres of gama grass would equal 125 stacks of corn-blade fodder which is more than is obtained from 300 acres of corn on common soils.

It appears that the attention of the American public was first drawn to this grass by Dr. Hardeman of Missouri, and Mr. Magill of Alabama. These gentlemen represent it as wonderfully prolific; and recently W. B. Meares, Esq. an enterprising and skillful agriculturist of this state, who has undertaken the cultivation of it, confirms, in a great degree, the previous statements of those gentlemen. Mr. M. has tried it in stiff pine lands, and in loose sandy soil, manured, and found it to grow well in both situations. The seed, when planted, should be put in drills, from 18 inches to two feet apart, and hand-hoed once, or oftener if necessary. In the course of the first season they spread and cover the whole surface. During the second year it may be cut once a month from May to November. I do not know for what number of years the same roots will continue to yield fair crops, but probably for three or four—perhaps more.

The genus *Tripsacum*, to which the gama grass belongs, according to Nuttall, is exclusively North American, and consists of only two species, *T. Dactyloides* and *T. Monostachyon*, indigenous to the Atlantic coast and the prairies of the Western States; thus rejecting the species mentioned by Michaux under the name *T. cylindricum*, having hermaphrodite flowers, and growing in Florida. I find mentioned, however, in London's "Encyclopædia of Plants," a species under the name of *Tripsacum hermaphroditum*, said to inhabit the West India islands, and to be used there as *pro-render*, and it is difficult to resist the conclusion that it is identical with the *T. cylindricum* of Michaux, having hermaphrodite flowers.

The characters of this genus are very accurately given in Nuttall's "Genera of North American Plants," and may be rendered thus: flowers monocious, disposed in spikes, (with an articulated or jointed rachis,) which are solitary or aggregated; upper flowers masculine or sterile, brought together by pairs; the lower fertile, the exterior valve indurated, closing the excavation in which the seed is imbedded, but perforated by two small holes at the base, and a two-parted apex for the egress of the two styles, which are plumose and exserted. The species *T. dactyloides* is thus described by Elliott: "Spikes numerous, (3 to 4) aggregate; florets sterile near the summit, fertile at the base;" and in his extended description thus: "Flowers in terminal spikes; spikes three to four, bearing flowers on one (the interior) side. Fertile florets two to four, at the base of the spike, sitting in the excavations of the jointed, scabrous, (?) somewhat triquetrous rachis." The description does not mention the spikes which terminate the *branches* of the stem, and contains some errors. It may be given more correctly thus: "Flowers in terminal spikes; spikes of the *stem* aggregate, two to four, bearing flowers, sometimes alternately on two sides, sometimes on one (the exterior) side. Fertile florets four to fourteen, at the base of the spike. Spikes of the *branches* solitary, and somewhat cylindrical;" (precisely like those of the *T. monostachyon*.) These *aggregated* spikes represent a cylinder cloven into two or more parts, and when brought together recompose a somewhat cylindrical body like a single spike of *T. monostachyon*.

The species *T. monostachyon* appears to differ from the preceding only in having *all* its spikes *solitary* and nearly cylindrical.—Elliott indeed represents it as smaller, and its leaves less scabrous or rough, but these are not very important characters, and may be caused by circumstances. Accordingly Pursh has suggested that *T. monostachyon* is but a

variety of *T. dactyloides*; and although Elliott and Nuttall have not recognized the propriety of the suggestion, yet there is strong probability of its truth. Mr. Herbemont, of Columbia, S. C., in a recent publication has advanced the opinion that those species are *one*, and grounds it on the following facts. He received some seeds, (all from one source,) and planted them, one portion in his garden, and another in his farm, where the soil is not so rich as in his garden. On examining the plants, he found some with solitary spikes, and some with aggregated spikes terminating the *stem*, while those of the *branches* were solitary. At the farm, the proportion of single spikes was greater than in the garden; and again, the proportion at the farm varied with the quality of the soil! thus apparently establishing the fact that one of the species (as they have been supposed) *runs into the other*; and that therefore they are not distinct species. Mr. Herbemont proposes therefore to abolish both of these specific names, and to substitute a third, suggesting for that purpose, *Tripsacum gamma*, in honour of the Spanish gentleman who is said to have introduced its culture into Mexico. For myself, I have a preference for *characteristic* names, and as we know so little of the person to be commemorated, I would suggest the appropriate name of *Tripsacum heterostachyon*, in allusion to the diversity of its spikes.

This plant appears to possess a surprising adaption to variety of climate, as well as of soil, growing spontaneously in the prairies of the West, and along the Atlantic coast from New England to Florida. (See Nuttall, Elliott, Eaton.) In this State it has been found on the Neuse, near Newbern, by us, and on the Cape Fear river in the counties of Brunswick, New Hanover and Bladen.—It can be propagated by its roots, as well as by its seeds.

H. B. C.

(From the Farmers' Register.)

QUERIES RESPECTING SASSAFRAS BUSHES.

1. Can any reader of the Farmers' Register direct how to eradicate the growth of sassafras in cultivated land?

2. Can any *medical* reader say what are the properties of the mucilage which the leaves of sassafras contain in such abundance, and whether, if extracted, it might be put to any valuable use?

For twenty years I have been trying to destroy this growth on a part of my farm, and to such little purpose, that I verily believe there are now as many plants growing as at first. It has not only been subjected to all the assaults from ploughs and hoes, incidental to good tillage of corn and wheat, but for several successive years, I had the plants grubbed up in August, whether the land on which they grew was at rest, or under a crop. The land so infested is sandy, and was formerly very poor, and is now only of middling productiveness; but it does not appear that any improvement, or injury to the soil, materially affects this abominable plant. Except for the trouble of grubbing which it causes, I do not know that it is injurious to the cultivation and product of corn; but the young shoots greatly hurt the growth of wheat, and make the reaping as wasteful as it is troublesome.

If this should be read by any farmer who is so lucky as not to be acquainted with sassafras bushes, he will wonder why grubbing up by the roots does not effectually destroy each plant so treated. But the truth is, that the root can only be cut below the surface of the earth, and never is (and perhaps cannot be) completely taken up. So deep as the grubbing of small shrubs usually goes, (say six inches) the smallest, as well as the larger sassafras bushes have only one perpendicular main root, which does not diminish in size as low as it is seen. When cut off by the grubbing hoe below the usual track of the plough, several young shoots soon start from below the wound, and if then let alone the grubbing would serve to increase the number of stems three-fold at least. The succeeding tillage at every operation again breaks off these young and tender sprouts; but when left undis-

turbed, by the field being laid down in wheat the sassafras starts with new vigor the following spring, and rises as fast as the crop. I admit that this growth has been generally the larger on my land, because (from neglect) the last shoots of the previous autumnal growth were seldom effectually grubbed at the time of sowing wheat—but the most careful and thorough grubbing at that time, would not lessen the number of sprouts that would be found the next harvest, though it would make their size less. My next neighbor, who is not less annoyed with these shrubs, tried a plan for their destruction, which at first I thought would be effectual—but the event showed that he had gained nothing by his great additional labor. His method of grubbing was as follows: The laborer dug away the earth from around the perpendicular tap root until he came to its origin; and it was always found to proceed from a larger horizontal root which extended to unknown distances, so that one of those roots might perhaps throw up sprouts from various places for an extent of twenty yards or more. These horizontal roots were generally ten or twelve inches below the surface, and confined to the very sterile subsoil. As it was impossible to get up the whole of these long roots, (which probably form a sort of open net-work under a whole field,) a piece was cut out wherever a sprout (even the smallest) grew from. This was in August. The large holes dug for this purpose were left open, and soon new sprouts could be soon putting out from both ends of the separated roots. Thus my neighbor's work served (like the cutting up of the polypus) to cause two to five where there was only one before.

But as I almost despair of destroying sassafras I rest my hope for relief on its being discovered to be a valuable crop. Upon chewing the leaves at any time from their most tender and succulent state to their full maturity, they will be found full of mucilage, which it seems likely may be of use in medicine, or the arts. It is well known that every part of the sassafras tree has a delightful smell, and a pleasant taste. The blossoms dried, and the bark of the root, make a tea which is so agreeable, that I think nothing but the abundance and cheapness of the material has prevented its being generally used for this purpose. About twenty years ago a trade in the roots of sassafras was commenced by sending it from James river to England, where the use of the tea was extending among the lower classes. The roots commanded a good price, and the trade promised to be profitable to us; but the jealousy of the East India Company (as it was said) caused this new trade to be quickly destroyed, by new and prohibitory duties on the article. During the few years that the exportation continued, the large roots of nearly all the sassafras trees in my neighborhood were dug up for that purpose; but as there was no difference of price offered, the roots of small shrubs, (though vastly superior in delicacy and strength of flavor,) were never used for sale, as they were much more troublesome to collect. If the purchasers had known the difference of value, a ton of small roots would have been sold for as much as twenty tons of whole stumps and large roots of trees, which formed nearly the whole amount of the commodity exported.

I should have stated that the field which is so full of sassafras shrubs, has not been grazed for more than fifteen years—which protection of course has given them the better opportunity to thrive. Grazing, however, would have checked the evil but very gradually. What makes this growth the more strange, is that the land before being cleared had but very little on it. I have cleared a considerable extent of poor woodland, where there were so few sassafras trees, (and most all of these small enough to be grubbed up,) that a slight observer would have pronounced that there were none. Yet in these fields, and on very stiff, as well as on light soil, their growth has since so increased, in spite of the usual cultivation, as to threaten the most serious injury to the future crop of wheat.

ANTHONY

Prices Current in New York, September 14.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, .15½ a 18½; Upland, .14½ a .17; Alabama, .15 a .18. *Cotton Baggings*, Hemp, yd. .20 a .22; Flax, .18 a .19. *Flax*, American, .8½ a .— *Flaxseed*, 7 bush. clean, 15.00 a 15.25; rough, 13.00 a —. *Flour*, N. York, bbl. 5.50 a —; Canal, 5.62½ a 5.75; Balt. How'd st. 6.00 a 6.25; Rh'd city mills, — a —; country, 5.87 a 6.00; Alexand'a, 6.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.87½ a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —. *Grain*, Wheat, North, 1.12 a 1.16; Vir. 1.20 a 1.25; Rye, North, .78 a .60; Corn, Yel. North, .76 a .75. *Barley*, — a —; Oats, South and North, .34 a .35; Peas, white, dry, 7 bu. 9.00 a 11.00; Beans, 7 bu. 5.00 a 10.00; *Provisions*, Beef, mess, 10.75 a —; prime, 6.44 a 6.50; cargo, — a —; Pork, mess, bbl. 15.75 a 16.00, prime, 11.75 a 12.00; Lard, .9 a .10½.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The New PINE, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2.00 per hundred.

EARLY SCARLET, LATE BOURBON PINE, and LARGE EARLY SCARLET, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, *Downtown*, *Grove End Scarlet*, *Bath Scarlet*, *Duke of Kent's Scarlet*, *Raspberry Hautbois*, *New Black Musk Hautbois*, *Wilmot Superb*, *Keene's Imperial*, *Keene's Large Scarlet*, 50 cts. per dozen.

MELON, METHVEN CASTLE, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

I. I. HITCHCOCK,

American Farmer Establishment.

RHUBARB PLANTS.

I have also for sale RHUBARB PLANTS, for tarts.—Price, for year old plants, 1½ cents each—for two year old or upwards, 25 cents each.

Also, SEARALE PLANTS, 25 cents each.

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or overbearing Alpine Strawberry, *without runners*, BOTH RED and WHITE, may be had at the American Farmer Establishment.—Price \$1 per dozen.

I. I. HITCHCOCK.

POINTER DOGS.

Two full blood Pointer Puppies, ready for delivery, for sale at \$10 each, by

I. I. HITCHCOCK,

Aug 30. Amer. Farmer Establishment.

THE FULL BLOOD DURHAM SHORTHORN BULL HECTOR IS FOR SALE.

This bull was bred by Col. Powell. The beautiful imported bull Memnon was his sire, and Daphne his dam, both of which are recorded in the English Herd Book for 1829. Hector will be four years old in October next, has no bad habits, and is thought by a judicious breeder, who has seen the best of this stock in England and America, not surpassed by any he has seen. Col. Powell says, that in his late agricultural tour to England, he saw no stock superior to the ancestors of Hector. It is a sufficient recommendation of this bull, to state, that he does not in the least detract from the reputation of Col. Powell, as the most successful breeder of this stock in America.

The price of Hector is \$500 cash. Apply to Doctor H. Howard, Brookville, Maryland. Sept. 13.—4t.

DEVON CATTLE.

For sale, the following fine animals, all of the pure North Devon Blood.

Bull Othello, four years old in May last, Price \$150. Cows, Rosebud and Volante, each three years old, Price, of each, \$100.

Heifers, Daphne, Sylph and Celeste, two years old last spring, and in calf by Othello, Price, of each, \$75. Bull calf, Dash, one month old, Price \$50.

If several of these are taken together, some deduction will be made in their prices. They are all excellent animals. Inquire of

I. I. HITCHCOCK,

American Farmer Establishment.

BAKEWELL SHEEP.

The Subscriber has become agent for John Barney, Esq. for the sale of his celebrated Bakewell Sheep.

The stock now on hand for sale, is the following: Eight or ten EWES, of good age and quality, at prices from \$40 to \$50.

About the first of September next, I shall have from the same flock six or eight Rams of this year's stock. Price \$50 each.

I shall have about the same time, from the flock of another celebrated breeder, a few Ram lambs—half Bakewell and half Southdown. Prices from \$30 to \$40 each. Address

I. I. HITCHCOCK,

American Farmer Establishment.

TALAVERA WHITE WHEAT.

[See No. 21 of this vol.—August 2d.]

A few bushels of this superior wheat, perfectly clean, for seed, may be had at the American Farmer Establishment, at \$2, if immediately applied for, to

I. I. HITCHCOCK.

DURHAM AND DEVON CATTLE.

Several bulls and heifers, from one to two years old, the product of a cross between the full blood Durham and Devon breeds, are offered for sale by a respectable breeder, at prices according to quality from \$50 to \$100 each. They are beautiful animals, and the above prices are considered very low for stock so valuable.

Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

WANTED,

All kinds of GRASS SEED, for which a fair price will be given, by

I. I. HITCHCOCK,

American Farmer Establishment.

STRAWBERRY PLANTS.

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are:—large early Scarlet, Pine Apple, Faulkner's Scarlet Pine, Dawson, Lima, Wilmot's Superb, Roseberry, English Red Hautbois, Black Musk do. French Alpine, White and Red Monthly, &c. Price \$1.50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.

40 lbs. summer and winter SPINACH.

100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2.50 per lb.

100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year)

Early greys or Scotch KAIL, Brussels SPROUTS, &c.

Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,

Aug. 23.

Corner 11th and Pratt st.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—We have again to repeat our former remarks of the absence of any change of consequence in the prices of produce, and indeed we find little or nothing to say that can give our readers any useful information. Business is steady and prices fixed according to our quotations. The wagon price of Howard street flour remains at \$6.00.

TOBACCO.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappabannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 399 hhds. Md.; 229 hhds. Ohio, and 47 hhds. Kentucky—total 675 hhds.

FLOUR—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.12½ a —; city mills, 6.00 a —; city mills extra 6.25 a —; CORN MEAL bbl 3 62½; GRAIN, new red wheat, 1.14 a 1.16; white do. 1.17 a 1.25.—CORN, white, 64 a 65, yellow, 66 a 67; RYE, 60 a 63.—OATS, 33 a 35.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED — a —.—TIMOTHY, 3.50 a 4.00 ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.25 a 2.50.—Herd's, 1.00 a —.—Lucerne — a 37½ lb.—BARLEY,—FLAXSEED 1.37 a 1.50.—COTTON Va. 15 a 16; Lou. 17 a 19; Alab. 16 a 16½; Tenn. 15 a 16; N. Car. — a —; Upland 16 a 18.—WHEAT, hhds. 1st p. 30 a 30½; in bbls. 32 a 33.—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 60 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40.—Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do 25 a 26; common, 25 a 26; HEMP, Russian, ton, \$170 a 180, Country, dew-rotted, 6 a 7c 1b. water-rotted, 7 a 8c.—Feathers, 38 a 40;—Plaster Paris, per ton, 4.00 a 4.12½; ground, 1.50 a —; bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton. 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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GENERAL**Agricultural and Horticultural Establishment:****COMMISSING,**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

☞ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

☞ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, SEPT. 27, 1833.

With the present number the subscriber ceases to perform the duties of editor of the American Farmer. A simple statement of the fact may be deemed sufficient by most readers, and this was all the writer at first intended; but upon reflection he feels somewhat like one about to leave a beloved circle of friends, perhaps forever, and that a simple "good bye" would be too cold and heartless a valedictory for the occasion—it would but illy express his feelings at all events. To a man of the least sensibility, the idea of parting from friends forever, is scarcely tolerable; but that of being forgotten by them, presents a picture to the mind that cannot be contemplated. The writer's situation is very similar to that above described, except that his circle of friends is composed of a great many members, numbers of whom he never saw. Between them and him the tie of friendship is unlike that that unites personal friends—it is spun by the imagination and grows insensibly into a cord of great strength; but it is altogether mental. We do not recognize each other when we meet, and when we become personally acquainted we are often sadly disappointed. The portrait our imagination had painted of our friends, to reconcile us to the tie in which it had bound us, is found greatly at fault, and the matter-of-fact mind has to seek for new materials of friendship in the personal qualifications of him before us. The origins of the ties of ordinary friendship, and that just described may be likened to those of hempen and silken cords—the former is drawn from a palpable common material, the latter from a fine transparent fluid. Such friendships, or ties of friendship, also seem implicitly to exist no longer, that the relative situations, out of which they grew, continue. When the editor quits his station, although he may continue to be known as a man, the feelings of friendship that exists between him as an editor, and his readers, gradually subside, and he is ultimately forgotten. It is this latter state of things that the writer deprecates. He can bear separation, but to be forgotten is annihilation.

The subscriber cannot take leave of the patrons of the American Farmer without assuring them, that his feelings will still be with them, whatever may be his future lot, in whatever situation it may be his fate or his fortune to exercise his faculties, he will still cherish the best feelings for the Agriculturists of the country. The profession of agriculture is the one, of all others, most congenial to his nature; a propensity for it seems to have been born in his bone and bred in his flesh; and though he now retires from a station in which he was able to do most good to that profession, he does not relinquish the hope of availing of many occasions of contributing something to its advancement.

If the subscriber were about to leave a legacy to the agricultural community, and were in possession of unlimited power to make a selection of that which he thought would be most valuable, he would unhesitatingly leave them a DESIRE TO READ, with the means of providing themselves with agricultural papers. If he could bestow this, he would consider all other earthly good as secured to them. But, unfortunately, this, the best, and the most easily obtained, is the last thought of, and least sought after, of all things by agriculturists. The invention of printing is of little importance to them generally—were the press annihilated to-day, nineteen-twentieths of the farmers of the world would not miss it, and many of the remaining small fraction would only be aware of its extinction by the absence of some political handbill. Were these the last words he ever expected to address to agriculturists therefore, they should be—read agricultural papers that you may obtain agricultural knowledge.

Next to reading, he would recommend writing, for none can read if none write. Every farmer should

write something for the information of others; and there is not a farmer in the United States that is not able to give some information that would be valuable to others. But the habit of reading necessarily begets a desire for and ultimately a habit of writing, and therefore our *legacy* embraces this also.

The thanks of the subscriber are due to the patrons of the Farmer, for the indulgence with which his many frailties, errors and imperfect labors have been received by them; and especially to those who have extended towards him a helping hand. He earnestly recommends to all a continuance of this indulgence and this assistance to the future conductor of the American Farmer. He would suggest that the American Farmer has a claim upon them and upon American agriculturists generally, over and above those to be found in its columns—it is the first paper ever established in this country exclusively devoted to their cause; and how well it has served that cause, let the present state of agriculture, compared with that before its existence, testify. Let them not, therefore, forget an old friend.

And, finally, the subscriber would assure his numerous friends, that though he retires from the labours of the editorial chair, he does not relinquish the hope of still enjoying the pleasure of their friendly correspondence. The science of agriculture, horticulture, and botany, will still be cherished and cultivated by him, as the source of all his pleasures, and it is not improbable that his studies and labours of pleasure, may occasionally add a flower to the public bouquet, or an ear of corn to the public granary.

GIDEON B. SMITH.

RHUBARB PIE.—The Rhubarb root, which makes such rich and delicious pies, will grow doubly well by placing an empty barrel over it. A friend of ours had two plants by the side of each other. To test the fact, he placed a barrel over one, and left the other uncovered. At the expiration of a fortnight, the covered one had extended itself beyond the top of the barrel, while the other by its side had grown, perceptibly, but very little. One plant served in this manner, will supply the largest family with materials for delicious Rhubarb pies.—*Northampton Courier*.

DRINK FOR HORSES.—Some of the inkeepers on the western road have adopted the practice, recommended by a member of the Bath Agricultural Society, of boiling the corn given to horses, and giving them the water to drink. It is most satisfactorily ascertained, that three bushels of oats, barley, &c. so prepared, will keep the horses in better condition for working than double the quantity in a crude state.—*N. E. Farmer*.

FOREIGN MARKETS.

LIVERPOOL, Aug. 24.

We have had an extensive and animated demand for cotton this week. The import is 10,750 bags, and the sales reach 41,900 bags, (including 18,000 American, and 3,500 Brazil taken on speculation) at an advance of 1d on Brazils, 1d on Americans, and 1d per lb. on Surats, viz: 310 Sea Island 15d to 25 6d; 230 Stained do 10½ to 15d; 10,850 Bowed 10½ to 12½; 11,040 Alabama, &c. 10 to 12½; 13,500 New Orleans 10½ to 13½; 970 Pernams, &c. 12½ to 11½; 2,720 Bahia and Macaie 11½ to 12½; 3,510 Maranhams, &c. 12½-8 to 13½; 200 common West India 10 to 14d; 310 Egyptian 14½d; and 1,100 Surats and Bengals 7½ to 9d per lb.

LONDON, Aug. 24. Wool.—There is an increased excitement in this market, public sales of Colonial and other wools having been announced. The recent advance is maintained.

Rice is in improved demand, 2,000 bags of Bengal have realized 16s a 18s per cwt. for middling to good white quality.

Tallow.—The market continues very firm at 48s per cwt.

AGRICULTURE.

NEW DISCOVERIES!

MR. SMITH:

Loretto, Va. Sept. 16, 1833.

I will not undertake to affirm that the present age is more vain than any which has preceded it; but if the more frequent occurrence in our public journals of communications with the caption which I have chosen for this, be any proof of vanity, then do the people of our day as far surpass their predecessors in this comfortable quality as can well be conceived, even by the most grumbling of the whole croaker race. Does any one demand the proof, let him only compare a few newspapers of the present time with an equal number of those published sixty or seventy years ago, and he will certainly find my assertion true: for where he perceives the phrase—"new discoveries" once in the latter, he will find it many times repeated in the former. It is certainly true that we should expect more now than in times long past, even if our knowledge had increased only half as fast as we believe it to have done. But admitting this to be true, and I am not disposed to deny it, our credulity should surely have diminished; for credulity is the constant companion of ignorance. Yet, how stands the fact? why that the mere proclamation of "a new discovery" gains implicit credence for the claimant among thousands who carry their eagerness to believe in such professed novelties so far, as often to take mere opinions for facts; to say nothing of their constantly adopting old facts for new ones.

I have been led to these remarks from the perusal of two articles in your paper of the 30th of August, purporting to communicate new discoveries; and they have brought to my recollection another article of the same character which was published in the American Farmer some time ago, and which I should have noticed at the time; but some circumstance not now remembered prevented me. Be assured, my good sir, that I do not make this declaration from any captious or arrogant feelings, or from a wish to dictate to others, but from a settled conviction that every subscriber to the American Farmer, (and I have been one from its commencement,) is interested in aiding you to make it the vehicle of correct information on every subject which you may think proper to notice.

The articles first mentioned are the two first in your paper of the 30th of August. That in relation to the catalpa has these words! "As an ornamental tree it has long been well known, but until last year we believe it had scarcely been thought of for any thing else, except in a remote part of 'the far west!'" and we are indebted to Gen. Wm. H. Harrison, of Ohio, for bringing it into notice." That General Harrison may have been the first to announce the fact in print, I will not deny, for I cannot disprove it; but you are mistaken in supposing that it was not long ago known in the east, as well as the "far west." It is at least ten years ago, I think, since captain T. T. Tabb of Gloucester county, in Virginia, told me that his father Col. Philip Tabb, who by the way, was one of the best farmers in Virginia, had long used the catalpa for gate-posts, and that he considered it certainly as lasting for that purpose as any timber he had ever tried. That many others must have known the same fact, I cannot doubt; for Col. Tabb was not a man to withhold from his agricultural brethren any useful discovery, supposing this proof of the lasting nature of the catalpa wood to be one made by himself. He travelled frequently over the best cultivated parts of his own state! was a very observant man, especially in regard to every thing connected with the husbandry of the country; and most probably had heard the fact from others older than himself. General Harrison himself was a Virginian, and I know did not take up his residence in the "far west," until some time after he became a man. So much for the durability of the catalpa wood being a recent discovery.

The second article to which I wish to call the attention of your readers, purpo is to be a discovery of certain Doctors, that "new wheat is unhealthy" and that the eating of bread made out of it has produced the cholera and all other malignant epidemics. Now, if ths were true, Mr. Editor, we should have had the cholera and other malignant epidemics, with dyspepsia in their van, after every harvest, from the time that wheat was first introduced into this country, up to the present day; for so long has bread made from new wheat been preferred to bread made from old wheat; and so long too has it been constantly consumed, without any of the dreadful consequences ascribed to it, being even suspected, until since the new-fashioned diseases "dyspepsia" and "cholera asphyxia" made their appearance. The reasoning used to establish the opinion, (for it is nothing more,) of the writer in the "Portsmouth Journal," is of a piece with the opinion itself. "This it runs;—half grown potatoes, cloy the stomach"—ergo, whole grown wheat, made into bread soon after harvest, will produce, first dyspepsia, next cholera, and other malignant epidemics. Again—"new corn, new fodder, and new hay, (all unbaked of course,) will not only fail to nourish horses, but it is said, (quote, by whom,) will actually so disorder as to sicken them;" ergo, new wheat *halved* will give men dyspepsia, cholera, and heaven knows what, besides. Again—the cholera and similar malignant diseases made their appearance in various countries about or very soon after the wheat harvest in each; ergo, bread made of new wheat was the cause of them. This discovery will match that of the old man mentioned by Miss Edgeworth, who affirmed that the steeple of Tenterden, in the county of Kent, was the cause of the Godwin sands on the coast of that county, because they began to appear immediately that the said steeple was built.

The third discovery which I thought of noticing some time ago, was that attributed to Mr. Forsyth, of Georgia, which has caused a long known variety of cotton to be called "Mr. Forsyth's nankeen cotton." A friend of mine told me, while our newspapers were ringing the changes throughout the country about this cotton, and the patriotism of the gentleman who had introduced it lately, into Georgia, that he had seen samples of it more than forty years ago in a cotton factory at Glasgow, in Scotland; but that it was not approved; and I myself know, that during our revolutionary war, it was partially cultivated in every part of the tide water portion of Virginia. So much indeed, was this the case for some three or four years, that, during the summer season, if you went to any public meeting in the country, you would see almost every man's breeches, (for pantaloons were not worn in those days,) made of nankeen cotton. Sometimes their coats also were of this material. Yet it was always so mottled, that it was next to impossible to make the cloth of an uniform colour; to remedy which it became the practice—especially among the country beaux, to dip their inexpressibles and coats into a solution of Arnotto, which made them appear at a distance somewhat like a flock of flamingos.

I remain, Mr. Editor,
Your constant reader and friend,
Quid Nunc.

P. S. If the editor of the Portsmouth Journal will inform me what his Doctors mean by "the meorganization powers of the stomach," and "collations viscera," I will let him into a bit of a secret, as I should judge it is to him, about the effect of new corn and new fodder upon horses. "Meorganization" is not to be found in any one of four or five dictionaries that I have consulted, and "collations," they inform me, means—"contributed by many," which seems to me, (ignoramus as I am,) a truly strange thing to affirm of a man's bowels, although it might very well be applied to the innumerable disorders created in them

by the Doctors themselves. My secret about new corn and fodder is, that we southerners verily believe, that nothing in our whole country will fatten a horse sooner than to turn him into a good corn field, where he can get either new corn or new fodder to his heart's content, at any time he may fancy them. The only precaution necessary—is, to turn him in upon a full stomach. It is true that the mode is less economical, than several others; but where dispatch is more consulted, than economy, it is often adopted.

REMARKS ON THE ABOVE BY THE EDITOR.—We are much obliged to our correspondent, "Quid Nunc" for correcting our errors; for we think that there is as much need of the correction of errors as there is of the diffusion of knowledge. Indeed, we are not sure but that a paper devoted entirely to the correction of popular errors, would be as useful to the public as any other publication whatever—and that it would have enough to do, that its columns would always be well filled, and that the subjects on which it treated would not soon be exhausted, we need not go out of our way to prove.

"Quid Nunc" will excuse us for correcting him in some particulars, of course. As to what we said of the catalpa, we think that "Quid Nunc" is rather open to the charge of fastidiousness, in his remarks upon it. We did not pretend that the durability of the catalpa wood was a recent discovery, but that a knowledge of it was confined to very few persons. Quid Nunc will of course not pretend that its durability was generally known; nor that its being known to Col. Tabb was of any value to the public, so long as the Colonel "hid his light under a bushel"—he certainly never published the fact, or spread the knowledge of it, as is proved by the fact that it is not now in general use. Nor will he pretend that General Harrison is not entitled to credit for giving the public the benefit of knowledge, which, though possessed, had been withheld by a few others.

We are not disposed to question the correctness of Quid Nunc's remarks on the subject of "new wheat." Whether the eating of bread made of it may produce cholera, &c. we leave to others to decide. But we do know that flour made from new wheat, is neither so profitable nor so good as that made from old wheat; and it is only one of the ridiculous fancies or vanities of the age that ever induces its use—it is the appetite that bankers after and pays fifty cents a quart for the first new potatoes, and the like, that ever prefers flour from new wheat to that from old.

The third error corrected by Quid Nunc is the least open to his criticism of either. In truth he has furnished the best argument against himself that can be desired by an opponent. We never claimed for Mr. Forsyth the merit of discovering the nankeen cotton; but on the contrary, we stated that many persons in the south had tried it, and that Mr. Forsyth had persevered in its culture until he had fairly brought it into market. That Mr. Forsyth has brought it into market, Quid Nunc does not appear disposed to deny, but rather endeavors to prove that the act is without merit, by depreciating the value of the cotton. Now the cotton spoken of by "Quid Nunc" as being "partially cultivated in every part of the tide water portion of Virginia," during our revolutionary war, could not have been the same as that cultivated by Mr. Forsyth, as is proved by what Quid Nunc says of the quality of the former. He says "it was always so mottled, that it was next to impossible to make the cloth of a uniform color; to remedy which, it became the practice to dip their inexpressibles and coats into a solution of Arnotto," &c. Now this is proof enough that the cotton cultivated during the revolution, was not the same as that now cultivated by Mr. Forsyth, for the latter is not thus "mottled;" on the contrary the cloth made of it is of a better color than any other nankeen we ever saw. It requires no dipping in a solution of Arnotto to make it uniform, nor any process to make it "fast." We have worn pantaloons of it all sum-

mer, and can say from experience that this nankeen of Mr. Forsyth is superior to any other kind known. For it is a *fact*, that the color is not only uniform and bright, but improves every time the garment is washed. Now, as Quid Nunc is anxious to correct popular errors we think he should take pains to inform himself of the qualities of Forsyth's nankeen cotton, by trying a piece of the cloth—we have no doubt he will readily find one error to correct when he does so. If Forsyth's nankeen cotton be not the same as that before cultivated, then we suppose Quid Nunc will allow that Mr. Forsyth has introduced a new article; but whether it be the same or not, it is certain that Mr. Forsyth has caused a valuable addition to be made to our agricultural products, as well as to our manufactures, and if he has been able to do this out of an article which had been so long known, and which no one could make any thing out of before, on account of its being "so mottled," we think the credit of the act still greater than it would have been to merely introduce a new article, the discovery of which might have been merely accidental, and of little cost, either of labor, money or genius.

Quid Nunc will of course excuse these remarks (the more freely made, probably, because in self-defence,) as they proceed from a sincere desire to act upon his injunction and to perform our duty in disseminating correct information. We shall at all times be glad to receive correction from "Quid Nunc," as well as other useful matter for our columns.

(From the Farmers' Register.)

FARMING IN YORK COUNTY.

Bellfield, York Co. July 11, 1853.

To the Editor of the Farmers' Register.

I regretted that it was impracticable for me to see you and show you my farm when you visited this region some time since. As you well know that my farm, when I purchased it, was poor, and continued poor for several years, you would have been gratified in finding that it was now tolerably productive; and it would have been interesting to you to have understood the process by which it has been improved. My object now in writing to you is, first, to give you some idea of the manner in which I have managed it, with the results—and to ask you to send me the first No. of your Register, and to consider me a subscriber for one year; on the other side you have a check for \$5.

As soon almost as I purchased this farm, I discovered that it furnished an abundant supply of marl. I began to carry it out, but found that it involved a great deal of labor, and my force being limited, I determined to ascertain whether marl was equally beneficial in each of my fields, and then to wait until I could be certain whether its effects were lasting or not; devoting much of my labor to making manure, and in hauling out manure from town, where I could then procure it in large quantities, whilst I waited to see the result of the experiments made on the marl I carried out. I followed this course steadily for six or eight years. My fields improved every year.—Manure in the meantime became scarcer, as others came into competition with me, and the price increased. I found that the improvement from the marl was lasting, and that every soil was greatly benefited by it, but that the stiffer the land, the larger the quantity which was required, to give it equal improvement. I then set to work in carrying out marl, with the design to marl all the land which I cultivated, and have now covered two hundred and thirty-four acres with this valuable manure.

I did not relax in my efforts to raise, and to haul out from town all the manure that I could make, and all that I could procure; and it has become a fixed rule not to cultivate a hill of corn that has not been manured in the course of the winter and spring. I begin by manuring broad cast, then I come down to manuring in the drill, taking care to reserve a sufficien-

*In England the cholera appeared about Christmas, and in North America—certainly before harvest.

ey of manure to give a double handful of well rotted manure to each hill, which I put around the corn after the first weeding, and immediately cover with a small Freeborn plough, running one furrow on each side, with the mold board next the corn. The corn manured in the hill produces almost as well as in either of the other methods, but of course the small grain which follows the corn is much less benefitted than by the other manuring.

My experience satisfies me that neither the four or five field system will answer on my lands. They are subject to wire grass, and unless a cleansing crop is raised once in three years, they become so foul, that the labor of raising a corn crop is scarcely compensated by the produce; and moreover, the fields grow up in bushes, and briars, and other things, so extensively, that every fourth year great labor is necessarily expended in clearing them.—The small grain crop too, after a fallow, is almost always very much injured by the fly, even when the small grain after the corn escapes entirely. Hence I have given up fallowing, and have returned to the three field system, and the rather, because I have found the corn crop by far the most certain, and indeed more valuable than the wheat crop.

Marl in the proper quantity I regard as very important, more especially for the corn crop. I have used it very liberally on some parts of my land, and I have not found eight hundred bushels to the acre too much for my stiffest land; but I have used about four hundred bushels generally to the acre. On small portions of my fields which are light with considerable sand, two hundred and fifty bushels have been used, and found to be equal to six hundred on stiff lands. I scatter it whenever I can do so, on the surface, after the land is fallowed, having ascertained that the first corn crop is but little benefitted by the application of the marl before the land is ploughed. I may not be able to give the true reason, but the fact is clearly established as well as the other, that when the marl is scattered on the surface of the land after it is fallowed, the first crop is as much benefitted as the second. I suppose, that when applied before the land is fallowed, the marl, in fallowing stiff land with a sward on it, is deposited in rows below the furrow slice, by the operation of the plough; and is not, during the whole season, brought up and mixed with the soil. It is different, when the land is light, since the furrow slice does not adhere as in stiff land, and the marl is mixed with the soil to a considerable extent in the fallowing, and pretty well mixed afterwards during the cultivation of the corn.

I have found it necessary to lay off the land in depositing the marl, that the same quantity nearly may be used on each acre, and the best method that I have been able to devise, is to make a chop where the marl is to be deposited from the cart.—Many of my acquaintances run furrows each way at the distance of eight or ten yards, and drop a heap nearly in the middle. My foreman takes poles 10½ feet in length, which he sets up in a row. He then steps off seven yards along the row thus indicated by the poles, and makes a chop; and so he proceeds along the row, making a chop at the end of each seven yards, and moving the sticks or poles as he comes to them. Thus the plough is dispensed with, and the places are marked out with considerable accuracy; although the distance but one way is measured, yet after a little experience, the chops even the other way are made with sufficient accuracy, and much time is saved. I adopt twenty-one feet, because it is the distance best suited to scattering with ease and dispatch; and because, as you perceive, each bushel of marl for the square of twenty-one feet, will give as nearly as may be, one hundred bushels to the acre. It then the load be ascertained, there is but little difficulty in putting out the marl so as to give the quantity desired to each acre. The marl being carried out before the land is fallowed, the interval between each row of heaps may be ploughed before the marl is scattered, and thus the

carting over fallowed land is avoided, and the marl is scattered over the land ploughed, save the rows of marl heaps; and when they are ploughed up, an additional quantity might be given to them, and if not, only a small part of the land will be marled before it is ploughed.

It is of great importance that vegetable matter should be given to the marled land; but as a gentleman in my neighborhood, of much experience on this subject, has often remarked to me, "any trash will be of high advantage, when the same would produce no good if used without the marl."

I observed before, that corn was by far the most certain crop with me, and as is believed, for all our lands below the falls and off the rivers; and probably, the most certain also on the rivers. Hence I am persuaded, that it ought more to be relied on than it is by the farmers, for their sale crop. Some disaster blasts the hopes of the farmer from his wheat crop almost every year; whereas the corn crop does not often fail. And it is a mistake to suppose that the labor and expense of the corn crop exceeds that of the wheat crop much, if at all. Being convinced of this from the closest observation, so far as my own experience goes; and this opinion being confirmed by the superior success of the farmers in the corn districts over those of the wheat districts, as far as my observations extend. I have determined to make my corn-crop my principal object; and to that end, I shall raise oats for feeding, to save the corn, which will enable me to put in my wheat crop with more ease, and during the period in the fall best suited for it.

I know that but little credit is due to the theories and views of those who are not successful in farming, and that I may remove this objection to my notions of the management of a farm, I add that my fields now produce at least twice as much as formerly, and that my field of corn last year, (every hill of which was manured for the crop, and only about three-fifths of it marled,) averaged me a little above thirty bushels to the acre.

JAMES SEMPLE.

(From the Farmers' Register.)

FALLOW—ITS VARIOUS AND CONTRADICTIONARY SIGNIFICATIONS.

One of the many requisites for advancing the improvement of agriculture, is a correct nomenclature, in which respect, no other science or art is so deficient. There are few terms usual in agriculture which are of universal acceptance, and many of them are used in senses so different, as to cause the written instructions given by one farmer to be unintelligible to most others. And these objections do not apply merely to the hundreds (if not thousands) of provincial terms used by unlettered cultivators; for they are found more or less to apply to the most correct and well informed authors. Indeed it cannot well be otherwise. Almost every term used in agriculture was at first provincial, or limited in its application to the practice of some particular district—and but few have been so extended as to be universally recognized in a single sense. If there should ever exist a general system of correspondence and concert among the agriculturists of the United States, one of the first operations ought certainly to be the adoption of some common signification of common agricultural terms.

But great as is this evil in our county, it is much worse when we take a view of British agricultural books, and compare their terms with our own. Many passages (from the use of terms to us unknown,) are as unintelligible to us as if written in some foreign language.

The word *fallow* is remarkable for its various meanings, which is the more remarkable, because much controversy has been carried on in England, and also in this country, as to the good and evil tendency of fallows. Some have continued to dispute on this question, after they had lost completely its original meaning; and have adduced the authority of some preceding and older partizan, as of their side, when if

opinions had been considered instead of names, they would have been found entirely opposed. As in questions of party politics, the terms, however perverted, are every thing, and their true meaning is nothing.

The term *fallow* applied to land, originally meant its lying untilled, and unproductive, or (according to our provincial term) at rest. When such land was ploughed up, during the old and very imperfect practices of husbandry in Europe, it was always done to be laid down in grain sown broadcast, and most generally, in wheat. As the process of preparation was performed with as little trouble as possible, it was of course commenced late, so as not very long to precede the sowing, and was limited to as few ploughings as would form a tolerable seed bed. This *wheat on fallow* we may suppose led to *fallowed wheat* as an equivalent term, and thence came the use of *fallow* to designate the ploughing or preparation of the land for the crop. Here were two totally different meanings, and the last evidently improper, if the first was correct. The first (and still most general) application of the word *fallow*, was to land not ploughed, or in use—while the new meaning was directly the reverse, or land ploughed and preparing for a crop.

As cultivation was improved, fallow (in its second meaning) became a very perfect and laborious operation, extending through the greater part of the year, and serving not only to put the soil in proper tilth to receive seed, but to cleanse it by the destruction of all noxious weeds, which had now become the main object of fallow. The original meaning was now quite lost (in agricultural language, however it might stand in dictionaries)—for though the land was still unproductive, it was any thing but neglected, uncultivated, or at rest.

The increase of skill and labor bestowed on this operation rendered it so different from the ancient practice, and from such as still remains in the worst cultivated countries, that we may consider it as a third meaning for fallow: for, according to the manner of the process, fallow was the pride of Scottish and English husbandry, while it was the disgrace of the French, where the ancient slovenly manner long continued, and perhaps still continues.

But as fallow was a preparation for wheat, when other horse-hoed and cleansing crops were afterwards introduced, and made to precede, and prepare the land for wheat, their cultivation was also designated by the same term—and the two kinds were distinguished by the names of *naked or summer fallow*, and *covered*, or fallow with a crop.

It was after this that arose the long continued controversy in Great Britain, between the advocates of naked summer fallow, and those who were for substituting it by covered fallow—or as they were called, *fallowists*, and *anti-fallowists*. The former maintained the high importance of cleansing the soil of weeds, and that it could only be done by a good naked summer fallow. The latter admitted the necessity of the cleansing process, but maintained that it might be performed sufficiently well, while cultivating some profitable crop, without losing a whole year of rent or product, as the naked fallow required. This was an important consideration, where the price and rent of land were so high; and the whole dispute in Britain turned on the loss of a year's rent, and whether that loss was compensated by the superior condition of the field from using naked summer fallow. The opposer of naked fallows admitted their good effects, while he contended that they were too dearly paid for by the loss of a crop, or of a year's rent; and their strongest advocate admitted that a covered (or crop) fallow would be preferable, provided it would leave the field as clean, and in as productive a state—which the fallowist denied could be the case.

I will here observe that the great objection, in Britain, to covered fallowing for wheat, was that they had no horse-hoed, or cleansing crop, which could be profitably cultivated on a large scale, and which ripened just before the time to sow wheat. If their cli-

mate, like ours, had been suitable to Indian corn and tobacco, these would have been considered fallow crops of such great value, as to serve as a general substitute for naked fallows. Yet in this country, where these two crops have so generally preceded wheat, we have never called their cultivation *fallowing*, merely because it had not been so named in England. Yet strict analogy directs that term to be applied to these crops, if beans are entitled to it in England. We have here also on every farm, fields lying at rest and unproductive, for one or two years between the years of tillage. Such fields are fallow, according to the most ancient, general, and most correct meaning of the term: yet in no case has this application ever been made, because the next succeeding crop was to be corn—and therefore we could not borrow a term from England, for a practice and cultivation not known there.

The laborious and expensive English summer fallow has been seldom if ever tried in this country, because our cheap land and dear labor would have made the practice too costly, even if our common cleansing crops did not render it unnecessary. But though we have no like operation to call summer fallowing, we have applied the term to another preparation for wheat, which is quite different, and which is never called by that name in England: I mean *wheat on clover lay*. This is, it is true, a summer, or early autumnal ploughing, and intended to prepare the land for wheat; but its object is entirely different from the process from which we have borrowed its name. The English fallow is intended to extirpate weeds, by repeated ploughing, harrowing, rolling, raking, &c. so as to leave the land as clean as possible. By our (miscalled) fallow, we intend to turn in a coat of vegetable matter by a single deep ploughing, to enrich the land, while a seed bed is imperfectly made above, by a later shallow ploughing or harrowing. Yet, deceived by the same name being given, we do not enough keep in mind that the processes are totally different. We have even taken sides for and against fallowing for wheat, and each party has borrowed the arguments of English writers, to sustain or oppose practices, which those writers either knew nothing of, or at least did not know under our names. In thus disputing about English terms doubly misapplied, we have neglected to ascertain by discussion and experiment the comparative and absolute value of our own practices. It is yet entirely unsettled what is the comparative labor and production, and improvement or exhaustion of fertility, caused by our wheat on clover, and wheat after corn, on the different soils suitable to all three of those crops.

In Lower Virginia, though we have denied the name of fallow crops to corn and tobacco, fallowing is a common term used for ploughing the land to prepare for those crops. This is the only sense in which we use the word, which has no special relation to preparing land for wheat.

The last and most strange appropriation of the term fallow is in the western part of New York to the *clearing* (or "chopping") of woodland for cultivation: not its subsequent breaking up for tillage, but merely removing the trees. As this use of the word fallow may be as strange to my readers as it was until very lately to myself, I will refer to my authority, which is an article in the *Genesee Farmer* of July 13, 1833, "*On Clearing New Lands*," in which this application of the term fallow is several times repeated. R. N.

(From the Farmers' Register.)

EXPERIMENTS ON THE

EARLY GATHERING OF CORN.

So many advantages attend our general practice of making corn a preparing crop for wheat, that we will probably adhere to it on all soils suitable to both crops, notwithstanding the alleged impropriety of one grain crop following another. Besides this succession being opposed to theoretical views of the rotation of

crops, there are also practical objections to all the various modes adopted for clearing the land of the first crop, for the purpose of preparing for and sowing the second—Formerly, the slovenly and yet most troublesome plan of sowing and ploughing in wheat between the rows of standing corn, was universal—it being believed that corn could not be cut up with safety, early enough to sow wheat. Now, the stalks are dug up, or cut off at the surface of the earth, and put up in shocks, to remain on the field until wheat sowing is done, and the corn is dry enough to put away in houses. The manner in which corn is shocked is varied much by different farmers; but in every way there is much labor lost by twice moving the corn and stalks—and the wheat is more or less injured by the final carting away of both. To avoid these disadvantages, I have tried gathering the corn before sowing wheat, and drying it in covered and ventilated pens, which plan, I have been informed has been long practised to some extent in Nottoway. The blade folder and tops of corn are usually secured in stacks (or might be) before the 1st of October, and on good and warm soils, still earlier. It is seldom sown in eastern Virginia, to sow wheat before the 10th of October, on account of the Hessian fly; and this interval of ten days or thereabout, may be used for the operation I propose. But before making more general observations, I will give the details of my experiments, and in substance, as noted in my memorandum book at the several times.

EXPERIMENT I.

September 22d, 1832. Began to gather the corn from a field of 15 acres, which the after measurement showed to have produced 35 barrels. The land was unequal in quality, and of course so was the corn in maturing. The ears were carted home, shocked, and put up in pens in the following manner: On three sleepers, or logs of six to eight inches through, laid parallel on the ground, common fence rails were laid across, so as to form a floor. The pen was built on this floor of similar rails, forming a square of nine feet inside measure; having a flue (a) of four inches through the pen, made by lying two other rails at that distance apart, through the middle. The flue, together with the rails forming it, took up near a foot of the space within the pen, so that the two partitions (b and c) intended to contain the corn, were each nine by four feet. The side rails were notched where they crossed, so as to lie close enough to

prevent the ears passing between. This trouble was afterwards found to be not only useless but injurious—as the laborers were so much on the corn as to shake down the ears closer than they ought to lie. As fast as three or four rails were put up on each side, the spaces were filled with ears. The corn was 9½ feet high on the 25th, when the pen was completed, and covered with corn stalks a foot thick, and sloping enough to pass off the rain.—It held 36 barrels of corn, or twice that bulk in ears. The gathering and shocking were continued, and a second pen of like dimensions was finished on the 27th, and a third on the 1st of October. The stalks had been carted off the field, and many of them to the hog pen, as all that were green were eaten by the hogs.

The stacking of my top fodder that year was begun the 12th of September, from which it may be inferred that the corn must have ripened more early than usual. From the 21st of September, the weather was uncommonly cool, and on the 1st of October there was white frost.

October 7th. Discovered that some of the corn in the oldest pen was mouldy, and believing that all was in danger, the two first pens were hastily pulled down, and the corn sorted and spread over vacant floors. There is no statement of the amount of damaged corn, nor does my memory supply the omission; but it was so much less than was expected, that the third pen was allowed to stand until the 22d of November, when

it was housed, and found to be perfectly sound, with the exception of 20 to 50 ears. This was the latest gathered, and from better land, and therefore was the driest corn when penned.

The loss sustained from this experiment was apparently caused by not being sufficiently careful in separating the unripe ears.

EXPERIMENT II.

1831. A pen of like size and construction was filled from a few acres of rich bottom land, and some adjacent high land. At what precise time it was done was not noted, as I was absent on a journey; but it was believed to have been in the last days of September. This remained in the pen until nearly the last of December, and proved to be as sound and dry as any corn whatever.

EXPERIMENT III.

Though this plan greatly lessens the whole labor of harvesting corn, removing stalks, and sowing wheat, still it requires more work, (or spare hands,) during the time of the operation—and sufficient time and opportunity were not again offered for the purpose until 1832.

Every corn grower in lower Virginia must remember how unusually late the crop was in ripening in 1832. The grain continued soft and milky so long, that the fodder could not be stripped within twelve days of the usual time. Indeed, if we had waited until all the shocks had lost their green color, and no milk remained in the grain, the fodder would have been so dried as not to be worth gathering. Still, my crop being very small for the labor employed, I was enabled to secure all the fodder by the last day of September.

Having previously decided to adopt this plan of early gathering this year, the gathering was commenced on the 4th of October, and continued through the 5th. The part to be gathered was selected, because it contained seven or eight acres of the poorest land in the field, which it was desirable to aid with manure, before sowing in wheat—without considering that the poorest land would of course have the lat est corn. This order so thoughtlessly given, was as thoughtlessly obeyed: and on visiting the work on the 5th, the damage had been carried too far to be entirely remedied. All the ears were pulled off—mostly carted to the pens for shocking, and thirty barrels or more shocked. It was obvious that much of the corn (from the poorest land,) was too green and full of sap for gathering. Nor could all the green ears be separated after shocking, as the eye did not discover their condition, and the laborers would not exercise enough care, nor had they enough judgment to make a proper separation. The quantity shocked too (mostly the night before,) had been thrown to the heap from where the laborers stood, or distances of five to ten yards. This had necessarily bruised or wounded some of the grains of many of the sappy and heavy ears—and my former trials had shown that the grains so wounded would mould or rot, though without that injury the whole ear might have kept sound. This error was stopped, and the remaining ears were placed in baskets as shocked, and sorted, so as to leave out the greenest and the already rotten corn.

Two pens were begun and carried on together. One was built in the same manner as formerly, except that the rails were not notched at all, except near the bottom of the pen. This saved much trouble, and admitted air more freely. The driest corn, so far as it was obtained by careless negroes, was used to fill this, and was emptied in from baskets as the building rose. The laborers were not allowed to stand on the corn, that it might lie the more open. Ears were placed on end, with some care, along the widest openings between the rails, to prevent any falling through. The second pen was of the same size of base, nine feet square within the side rails; but for greater safety, was given two parallel flues, which divided the space to be filled with ears into three parts, each 9 by 24

feet. One of the outer parts was filled nearly to the top with the greenest of the ears that were sound, and tolerably well filled. The balance of this compartment, and the whole of both the others, received the drier corn, such as filled the first pen. The first was raised to fourteen feet, and the second to eleven, and both contained from 120 to 130 barrels of corn. After taking off these two sorts of corn, there remained the rotten (or rotting) ears, those most imperfectly filled with grain, and the greenest and softest of all, from late replanting. Altogether, this parcel contained nothing that would have been fit for sale if it remained in the field, or for any other use, except to feed hogs. This was laid on a floor similar to those of the other parcels, and penned without any partition, or due, as it was expected to be used for fattening hogs before it would suffer damage. This bulk was three to four feet thick in the middle, but thinner at the sides, and only covered by loose shucks. Several days passed before the hogs could be put up, which delay caused this parcel to be that much longer on hand than was expected. Several rains fell on its cover of loose shucks, and it was not dried or removed. In fact, the quantity of corn was so small, and in the course of being rapidly consumed, that the overseer neither examined it, nor thought of its being in danger, until too late. The last of it rotted, and there was a loss of about ten bushels of grain, which the slightest care might have prevented.

The pens were covered by cornstalks, laid straight, and about a foot thick, raised to a ridge across the middle, and forming eaves projecting two feet over the north and south sides. The corn was closely watched, and with much alarm for its safety, for twelve or fifteen days. Within three days after the pens were finished, a few ears on the north of the first pen, so near the outside as to be exposed to the eye, began to show a white mould forming in some spots; but they were left undisturbed, and the damage did not appear to extend much farther. The interior of the bulk was examined by pulling out enough ears in other places, and found in good condition. No scent, nor other indication of sweating or heating was perceived.

On December the 7th, the pens were emptied, and the corn again sorted, and put away in the house. By cutting an opening through a few of the bottom rails of each division, the ears came down as fast as required. Every rotten and damaged ear was thrown out, and the whole appeared to the eye about equal to a bushel of grain. Perhaps fifteen or twenty ears were entirely rotten. All besides was sound, in perfectly good condition, and uncommonly dry for the time of year, so as to shatter considerably in the operation. I examined particularly the emptying of the partition which contained the greenest corn, and found it as sound as any. But many of the ears, though sound, were so shrunk as to offer abundant evidence of their very green and sappy state when gathered and put up. Others that were plump and well filled, remained bent by the pressure they had suffered in the pen; and even the grains in some spots were indented and altered in position by the pressure of another ear, without being otherwise affected. Some others, however, showed mouldiness at such indented spots. Altogether, the loss in the pens from both rotting and mouldiness was very inconsiderable, and less than would have been sustained if the corn had remained either standing or in shocks in the field. The shrivelled ears did not suffer either from penning or too early gathering—but from having the fodder taken off before the grain was enough advanced. The plant is effectually killed when deprived of its top and leaves; and the ear may be as safely piled within three or four days after, as at any later time, if it can be kept as well exposed to the sun and air.

The gross error committed in gathering for this experiment so much of the greenest corn, caused much trouble and still more alarm. But even with that blunder, I think there was no loss of crop sustained, except in the parcel used for hogs, which also was

caused by neglect. When these pens were completed, the whole of the balance of the field might have been safely gathered for penning; but I feared to proceed with even drier corn, when 130 barrels were considered already at great risk. I therefore proceeded to cut off the remainder of the corn, and carted the whole to the ground before the cribs, and ricked it, by the opposite rows of stalks being made to lean against each other across poles on low forks. The width across the tops of these ricks, where the ears were, was generally from six to ten feet; and about the 15th of October, one place (for want of room at that time,) was set up between twelve and fifteen feet across the top, which was considered safe, from the dry state of the corn then brought in. But this spot was damaged by the thickness of the rick, and about one to one and a half barrels of corn was found when gathered, to be partly or entirely rotted. This corn, from the better quality of the land, was much more matured than the greenest part penned, at the time when the latter was gathered.

Another examination was made of the corn that had been penned in March, 1835. Its good condition continued, nor was any difference from other corn perceptible, except that the large end of the cob generally appeared darker. Eight or ten acres of my present crop were planted from this corn, which was found to vegetate as well as the adjoining, planted with other seed. We are now using the same for bread, and can discover no objection to its quality.

The results of all these experiments prove that corn may be safely gathered a month earlier than is usual; and the errors that have been stated, and the consequent losses, probably may serve as warning enough to guard against every danger. A sufficient guide to show when the large and soft grained corn (such as mine was,) is fit to gather, is the shuck having lost its green color, and the grain being firm, and clear of milk; and on rich and warm soils, corn is often in that state by the 20th of September. The advantages of this plan are these: 1. The whole labor of moving of the corn and stalks, is much less than in any of the usual modes of first carrying them to shocks, and carting them home after the wheat is sowed; 2. The shocks and stalks are saved for food or for manure, when more full of sap, and much richer for both purposes than they can be after exposure to the weather, until late in November, even if a wet season does not keep them much longer in the field; 3. The whole field is cleared for ploughing, and sowing wheat, so as to allow that important operation to be performed in the best and cheapest manner. Clear space is also given for applying to wheat whatever manure may be on hand and ready for use. It may not be practicable or desirable to gather the whole crop of corn in advance of our wheat sowing; but if only one third is so managed, it will permit the preparation for wheat to be advanced ten or fifteen days, and at a time when, on corn farms, horses are generally without employment. E. R.

HORTICULTURE.

(From the New England Farmer.)

FRUIT TREES.

The following observations are prefatory to an abridged Descriptive Catalogue of the fruit trees in the collection of J. B. Van Mons, a celebrated cultivator of fruit trees in Belgium, Europe. We were favored with the manuscript by R. Manning, Esq. of Salem, Mass. for whom it was translated from the French, by Miss Elizabeth C. Hathorne, of that place. We think the remarks cannot but prove useful to all persons engaged in the raising of fruits, and especially to those who wish to create or introduce new and improved varieties of apples, pears, &c.

TRANSLATION.

Being unwilling to leave my correspondents in igno-

rance of the fruits which I have sent them, designated by numbers alone, I have caused the materials for this catalogue to be collected during a severe illness. There may be omissions in it, but there are no errors; and the repetitions refer to the parent stocks, and to their grafts, but are not unnecessarily employed.

In so vast an establishment, containing not less than 86,000 trees, it was impossible to inscribe at length on tickets the names of all the fruits of which we distributed grafts; and we found it at once more simple and more expeditious to mark on a slip of paper the number attached to the tree, and to point out afterwards the variety to which the number belonged.

We attached a number in lead, suspended by a wire of the same metal, to every tree and graft in the garden, as well as to every Sauvageon (ungrafted tree, raised from seed,) from which we gathered fruit, and we noted in catalogues the names or the qualities of the fruits to which these numbers referred. We have thought it expedient to have these catalogues printed.

There are in the first series many numbers to which no descriptions are annexed, because they are occupied by old varieties generally known. The vacant numbers in the second and third series belong to new varieties which have not answered the expectations formed respecting them. Some vacancies are also left by duplicates and triplicates of the same variety, which we had received under the same names.

We have, as far as possible, given the names of the authors of the fruits. By its patrons, signifies that it was found by the cultivator whose name it bears. By ourselves, that it is the result of our endeavors. The articles designated by numbers alone, are necessarily products of our culture.

I have added in my catalogues the approximative forms of my new fruits, though nothing can be more uncertain than this characteristic, for the form of a pear varies during 12 or 15 years before it is definitively fixed; and there are some which never attain a fixed form, as the Bon Chretien d'hiver, the Beurre Rance, &c. I have compared them to known varieties. I might here compare them to the wild fruits of the same species (sous especes des bois,) but in countries where the kind does not grow spontaneously, there would have been no point of comparison.

We admit into this catalogue only the species which we have been able to send to our correspondents, under the form of grafts, such as the pear, apple, plum and cherry tree. We have, however, discovered a method of conveying under the same form the peach and the apricot tree. It consists in grafting them on the summit, or on the bourgeons (bud's eyes) of the plum tree, and sending the grafted branch before or after the development of the eye, to be grafted *en fente* (or cleft or slit-grafting) on another plum tree. We have never yet found this method to fail.

There are many numbers which have not yet received names, because we thought it right to name only the varieties, which in our judgment merited the title of *tres a propager* (eminently worthy to be propagated,) which expressed the highest excellence that a fruit can attain, and requires it to be superior to a St. Germain, a Beurre Gris, a Chaumontelle, a Colmar, a Cressane, &c. Respect to the persons to whom we offer the homage of our fortunate acquisitions by bestowing their names upon the fruits, exacts from us this extreme reserve.

This distinction between fruits *a propager* (to be propagated) and those *tres a propager*, is solely for ourselves, who are so rich in this last quality of fruits, which unites elegance of form, and amplitude of size, to the utmost delicacy of flesh and of juice, while we are so poor in subjects for grafting. The words excellent, exquisite, delicious, annexed to a great number of our new fruits, are equivalent to the declaration that they are as good as the best old varieties.

In another position than that in which we are placed, we might enlarge on the origin, the form, the qualities, I will say the defects, the epoch of maturity, and other particulars of the fruits bearing names. In the next

supplement, if it be ever published, we may, perhaps, revert to these details; but at present I can only cause to be transcribed the judgments pronounced upon each variety, and consigned to my notes.

It may be asked, how we have been able to obtain from our seed plots so many fruits, so extraordinary in all respects? We answer that our method has been to renew incessantly the old varieties, acknowledged as exquisite. By renewing we mean planting always the kernels and stones of the last produced, regenerating thus from father to son. We said to ourselves once for all, that the more a species, being propagated from seed, and at the same time by shoots or suckers, is removed by being repeatedly sown, from a state of nature, the more it must approach a state of art. We have since acted in conformity to this principle, and already at the third renewing, the fruit of the peach and apricot tree is no longer of ordinary merit, and at its fourth sowing the apple is reproduced constantly exquisite. This has not been the case with the pear tree, which still produces ordinary fruit, though no longer bad. But for this characteristic of the pear, and especially that of the incessant variation of its form, pomological researches would be already without an object, and the study of fruits would consist only in a dry acquisition of names.

Our seed plots were differently treated according to the species. The pear trees were planted in squares, and the apple trees were placed in one of the corners of the garden; these species were never planted together. The peach and apricot trees, sown confusedly, were removed only to be placed where they were to remain. The growth of all was restrained by pruning till the moment of permanently placing them; and at transplantation the branches were slightly drawn together, and the roots forcibly so, in order to make the latter subdivide, which causes the tree to bear early. After the transplantation they were not touched. In the second year we examined the pear trees, leaving only those of good appearance, and choosing the others to graft upon. This grafting could not be performed without removal, because the growth of the sauvageons would immeasurably outstrip that of the grafted trees. We therefore raised the trees, just before the frosts, and placed them *en jauge* [in casks or barrels,] in order to graft upon them by copulation, and out of the earth at the end of February; or we grafted them in this manner before the beginning of winter. These grafts have endured with perfect safety the severity of the past winter. This method is preferable to every other for the pear tree and the apple tree. The suffering, which in this case is common to the tree and the graft, secures its taking and determines an equal force of development. It might be called *the graft on one's knee, or the graft at the corner of the fire*. It is the only one which should be practised, except *en fente* (slit cleft) for the paradise and the quince tree, of which every piece of a trunk, branch or root only, two or three inches long and two or three lines thick, may be made useful as a subject.

This selection of subjects for grafting does not prevent our trees from being so near each other as to shoot into the air, like arrows, and to resemble Italian poplars rather than ordinary pear trees; they were not forced by the knife to take a direction contrary to nature; and these trees, so high, so straight, with branches so regular, and unapproached by any insect, were every year covered with fruit from the summit to the foot. The great art in giving to a tree *au vent* (not trained in any particular shape) a regular form in maintaining the equilibrium between its branches, is to make it take from its birth a right direction by attaching it to a proper support.

The new fruits have over the old the advantage of yielding a rich and constant crop, and of exemption from a falling off and from alteration. They are less liable to any malady.

When a peach tree is raised from the stone and *au vent*, it is as unnecessary to despoil it of its branches as to thin it of fruit; in the third year, it puts forth

only short branches, which bear without intermission, and whatever be the number of the fruits, the smallest is not less savory than the largest; the flesh of the peaches of seed plots remaining long transparent and greenish. This is also the case with the Nectarine, whose fruit *au vent* may be preserved from insects.

I was at first in the habit of placing a graft of the most distinguished of my sauvageons on a lateral branch of a mature tree; but I have always observed that this branch and the parent stock began to bear the same year, so that while the trees were mutilated nothing was gained in precocity of crop.

It will be perceived that in our last catalogues, the number of fruits inscribed *excellent* is much more considerable than in the first: this proceeds in part, it is true, from our more extended cultivation, but also from the circumstance that in proportion as we advance in renewing the varieties, the number of distinguished fruits is multiplied.

We also remark, that the more the fruits are renewed, the fewer early varieties do we obtain; for example, in the last year few of our apples and pears of the first crop ripened before winter, and even at this moment (March) I have a great number which are not ripe, and which ripen successively as they advance in merit. It is true that in the selection of sauvageons, we remove all the pear trees that are without thorns and with stout branches and large leaves, as these are signs of precocity, and all the apple trees whose appearance resembles too much that of the early varieties.

It will be observed, that we have principally directed our endeavors to the improvement of pears. This was natural, because the pear has not hitherto been reproduced identically, but under astonishing deviations, which have hardly permitted comparisons. We have, in our thousands of results, obtained forms which resemble each other as to the fruits, but the appearance of the tree, the wood, the foliage, were entirely different; and when two trees had some resemblance in appearance, wood and foliage, the fruit was totally distinct. The following was my mode of passing judgment upon the varieties. I invited to dinner a friend, whose taste in fruits was exquisite, and we tasted together; then I made my two gardeners taste; we discussed for a moment the merit of the fruit, and I consigned the judgments to my notes, with the very expressions which are found in the catalogue. As fruit whose period of maturity is not yet known must be gathered at different times, and at intervals of ten days, we had never less than two hundred sorts to taste. The No. attached to the tree was transcribed upon each fruit. Every variety judged very good, and of the highest quality, was afterwards gathered and distributed to connoisseurs, on condition of returning the stones and the kernels; we have never sent a good new fruit to the market; we chose to allow it to rot in order to preserve the seed, rather than to sell it at a high price.

I was obliged to quit Brussels when almost all my sauvageons of the fourth and fifth renewing were about to bear, an object of public utility claimed the ground which my establishment occupied; I shall, perhaps, be compelled to leave my new gardens when nearly all my sauvageons of the sixth and seventh renewing are covered with flower buds. I see that the more the renewings are multiplied, the earlier the sauvageons begin to bear; a great many of my pear trees of 3 and 4 years old will produce this year.

In the inevitable disorder attendant on the destruction of an immense cultivation, effected during the severity of winter, it was impossible not to lose some varieties, though we took grafts of all the most precious, and though of these grafts, placed double and in April and May on trees out of the earth and half dry, very few perished. To gather grafts and to abandon the trees was all that we could do at such a moment, and when we could ourselves be present only for a day and a half in the week. We are conse-

quently obliged to request our correspondents to return us grafts of these lost varieties, which are in their possession.

TO PRESERVE WINTER APPLES SOUND.—After the fruit has arrived to perfect maturity gather it by hand from the tree, in dry weather; select the finest, wrap them carefully in paper, and place them in fresh barrels in a dry cellar. The barrels should be tightly headed. Or, after the barrel has been carefully filled with apples *without* the wrapper, pour over them dry sand from a brick yard until the barrel is filled, the sand will easily find its way to the bottom and completely fill the crevices. We have tried both ways with much success, but prefer the former, as it is difficult perfectly to remove the sand from the apples preserved in it, which renders their effect upon the teeth somewhat like Mr. Chandler's "grind stone apples." We have now, perfectly sound apples of last year's production, which have been kept in papers. The paper of the Messenger, we think, is admirably adapted to this purpose, and those of one year's subscription would be sufficient to paper a barrel of apples, and would in this way alone amply compensate the subscriber.—*Crawford Messenger*.

RURAL ECONOMY.

(From the Farmers' Register.)

ON DISTEMPER AMONG CATTLE.

The objects of husbandry are so numerous, and many of them involved in so much mystery, that no one man can attain to great success, without the aid of others. This noble art requires that its votaries should be extremely liberal, if they would become prosperous. A free interchange of opinion may often serve to elicit truth, even in matters the most intricate. With such views, I lay before you some suggestions on the disease among cattle, usually called the "*distemper*," which though far from satisfactory to myself, may lead to a full investigation in the Register and to important results among our farmers.

That this disease is propagated by those cattle which are, or have been the subject of it, forms the basis of the opinions which I would now present.

I believe the opinion has heretofore most generally prevailed, that the disease has spread from the effluvia produced by the carcases of animals dying of it, and from their bones. This belief I suppose, gave origin to the law requiring that such carcases should be effectually buried, or burned, and forbidding even the preservation and tanning of their skins. This law was, for a long time, rigidly enforced in my neighborhood, but so thoroughly are we convinced of its inefficiency, that it has now become a dead letter, except with such persons as conscientiously obey every law of the land—as such—however burdensome they may esteem it.

Every one familiar with the disease, must have seen cattle, not infected, following the funeral obsequies of its victims with impunity, while nothing but a line-fence debarred them from absolute contact with the carcass. Nay, I have often seen my dogs bring the bones of cattle dead from distemper, among mine which had not been exposed; and I was at first alarmed for the consequences—but none had ensued. Having an extensive common near me, I have permitted the greater part of my cattle to range at large, and have retained, in an enclosure, a few favorites, together with my working oxen, and those intended for such. These two portions of stock have been very cautiously kept asunder. The disease for several years destroyed some of the first, while the latter were entirely exempt from it, until one of the oxen broke the fence and grazed for a short time, among the exposed cattle. He died in a few days of distemper.

It may be said, that all admit cattle may take the disease from grazing with the infected, but that this

does not imply that they cannot take it in any other way. Nature, though rich in means, is economical in using them, and we generally find but one cause used in the production of an effect. This cause, in the propagation of infectious disease, is usually something generated in the sick, and applied either by actual contact, or in the form of effluvia, to some secreting surface of the well. From what was said above, it appears probable, that the distemper of cattle is hardly produced by effluvia, and I infer that a sufficient cause may be sought, in the application of the saliva of one cow, to the mouth of another, from her eating food previously besmeared with it.

In confirmation of this opinion I will state a few facts, whose bearing on the subject, you will readily infer. I have been credibly informed of a wealthy gentleman, who more than twenty years ago, on finding that distemper had invaded his herd of cattle, ordered that every animal seized with it, should be confined in a particular lot, never to come out alive. Those that died of the disease were deeply buried, and such as recovered were fattened and slaughtered for beef. This prompt measure, is said to have been succeeded by a perfect exemption from the disease.

Two other gentlemen, within my own knowledge have enclosed extensive parcels of land, almost literally whitened with the bones of cattle which died of distemper, and made pasture of the very lands thus included. One of these has enjoyed perfect exemption from the disease, for ten or twelve years. The other had his cattle infected, by getting on a common, after total exemption for about the same term.

In districts where this disease prevails, it is generally known, that there is no danger to oxen of receiving it, in however exposed situations they may be driven, provided they are kept well muzzled. This precaution was much observed in this section some years ago, but the terrors of the disease were away with its novelty, and we have become more careless.

It may be thought singular, than an animal, after an apparently perfect recovery from a malady, should be capable of communicating it to others. There is no analogous case, in our own species, but there is one in the horse, which, I think, is just in point. The matter, I believe, is well settled among farmers, that a horse may apparently recover from the glanders, and still communicate it to every other horse, that wears the same bridle, or eats out of the same manger.

I believe, however, that the cow which has once suffered from distemper, is liable to slight annual returns of it. And it may possibly be, that she is only capable of communicating it during these returns. I have known two cows that appeared to have distemper slightly every summer. One of these was my property. This cow though apparently healthy, had a yellow liquid continually dribbling from her nose, and her hair had a dead appearance, even when she was fat. Suspicion of keeping up the disease among the stock, fell so heavily on her, that I caused her to be killed about four years ago; since which time I have known but one case of distemper among my cattle, and that occurred a few days ago to a cow running on the exposed commons.

Some think this whole subject so deeply mysterious, that it is utterly useless to attempt its investigation; and others, that the land on which cattle have the disease, in some strange way, becomes poisoned and remains so for an indefinite period, and that there is no hope that it ever can be disinfected. We would remind the first of these, that the small pox—which has, perhaps, destroyed more of our race than any other disease—existed for two centuries in England, before any idea was formed of its laws of infection, or any rational mode of treatment discovered. The opinion of the latter is so much opposed by all the operations of nature, that we could never adopt it, while any other mode of accounting for the facts could possibly be found.

On the treatment of this disease I have but little to say. Some very active remedies have been recom-

mended, and many very trivial nostrums with the utmost confidence urged; but I have never known one of the worst cases cured by any thing. When the disease appears in a mild form, the animal is disposed to eat a little, and shows no particular indisposition to motion. But the symptom, on which I have chiefly placed my hopes of recovery, is the character of the urine; whenever this assumes the appearance of a solution of copperas, although sometimes nearly black, I expect recovery, whether the animal is physicked or not. But when the urine is bloody, I forebode speedy death, for, with this symptom, I have known no cure effected. The same symptom occurs among the cattle in Scotland, affected with the disease there called the bloody murrain, and I have from that circumstance suspected the identity of the two diseases. It is said, that the distemper among our cattle was brought here, by droves from North Carolina. Some parts of that state were settled almost entirely by a Scottish population. Is it not possible, that the disease was originally imported from Scotland? It so let us call it the murrain—for I have long disliked to hear it called the *Carolina* distemper, as the use of that name seemed to imply a reproach on our very respectable sister state. In Scotland, for the murrain, they recommend strong saline drenches, boiled milk, and other articles calculated to produce great thirst, hoping, by afterwards allowing copious draughts of water, so to attenuate the blood, as to change the character of the urine. From such remedies, however, I would expect nothing in the distemper of our cattle. Were I to recommend any thing with this indication, it would be some cheap diuretic, in copious drenches, such as melon seed or parsley root tea. But the disease seems to take deeper hold than merely on the blood. There is derangement in all the secreting organs, the stomach—the liver—the kidneys, and indeed every important organ is frequently gangrenous, and in one instance, I saw blood oozing through the skin, like drops of sweat, before the death of the animal. If any effectual remedies are ever discovered, they must be such as will act upon the solids.

The means for prevention, promise little more than those for cure. I would judge, however, that such treatment as would contribute to the health and comfort of an animal, might enable it better to resist the contagion of disease. To this purpose, besides a sufficiency of wholesome food, nothing can contribute more than an unlimited supply of salt. And I am inclined to think, that those cows which have a sufficiency of this article, are more apt to escape the disease.

Mankind have been long disposed to rely on tar and other strong scented substances for the prevention of disease. Surely the smell of goats might stand a fair candidate for the honor, if any stinking scent could charm away distemper.

Candor requires, that some facts that seem to oppose the opinion advocated above, in relation to the mode of contagion, should be noticed. Cows have been known to die with symptoms of distemper in the heart of cities, while confined in close lots, and secluded from all intercourse with other cattle. I admit this to be a fact, and feel the force of the difficulty arising from it. The solution, however, may depend on minute circumstances with which I am unacquainted. The only case of the kind, which has come under my personal observation, was that of a cow, which died in three weeks, after being closely confined in a lot in Richmond. Being ignorant of the time which may elapse between the period of exposure and of attack, we cannot determine that this animal did not contract the disease on her way to Richmond. But admitting that she took the disease after arriving in her lot, I know no more probable supposition of the mode, than that her hay or other food had been accidentally besmeared with the saliva of some distempered animal. This, in a country, like that around Richmond, filled up with infected cattle, would appear not at all improbable. Very possibly, she was fed on food hauled to town by oxen of this description, and their

driver would be apt to permit them to have access to their load.

The distemper may be called a summer disease, occurring according to my observation, between the first of June and the first of December. Much the larger number of cases occur in the heat of summer, and very few, as the cold season advances. This may possibly be, because there is less grazing in cold weather, and the herd of each owner is confined to itself, so that there is less opportunity of spreading the disease in winter. But, a tendency to peculiar prevalence at some particular season of the year, is a characteristic of, perhaps, every infectious disease, in man or beast. Whether the period between exposure and attack is limited as in most infectious diseases, or without limit, as in hydrophobia, is a question unsettled. It is very certain, that hot weather operates powerfully in exciting the virus to action. From my observation, I would judge the period, between exposure and attack, to be, within the limit of three or four weeks, and that an animal having escaped for this length of time, is in no danger until a fresh exposure. A large number, however, of those exposed, escape entirely, or have the disease so mildly that it is not perceived.

The object of this communication is chiefly to excite inquiry. It it should be found on farther investigation that the disease owes its continued existence to those animals solely, which have been subjects of it—then there would be hope of exterminating it, by removing from our farms, every one on which suspicion could possibly rest, and supplying their places, by an entirely new stock. The custom now is, to place a higher value on those cattle which have recovered from the disease, under the impression that such will enjoy a future immunity from its attacks. This may long be the case, in cities and villages, where a family rarely keeps more than one cow. But surely no farmer would desire to keep an animal, whatever might be its intrinsic value, could he once clearly ascertain, that it carried about it, a poison capable of perpetuating such a disease among his stock.

A. B. C.

(From the Observer and Reporter.)

BYFIELD HOGS.

Since the establishment of Agricultural Societies in our country, great attention has been paid, and large sums expended for the improvement of stock of every description. Hence it is, we have horses and horned cattle equal to the English breeds, and sheep that produce all grades of wool; the Merino and Saxon, not inferior to the Spanish and Saxony wools.

Our hogs have also been greatly improved by a cross of the Chinese and Calcutta breeds. Other descriptions of hogs lately brought to the western country, promise a still greater improvement in the stock of this most valuable animal. They are the *Byfield*, the *Swiss*, and the *Russian*. Of the three, the Russian is less preferable, being small and too fat generally to be prolific or profitable; but when crossed with other stock, a desirable breed is produced, but not equal to the Byfield or Swiss; of these two, time has not yet developed which is best. Mr. Robb, of Indiana, gives the preference to the Swiss, while Mr. Bird Smith, of Woodford county, who is raising the above named stock, gives the preference to a cross produced through the Byfield and Swiss.

The Swiss hog is a dark brown, lengthy and round bodied, big bone, hair thin and coarse, very prolific and easily kept; weighing from two to three hundred pounds at a year old; at two years old he will weigh from four to five hundred pounds. The Byfield is a beautiful white hog; his ears are small, pointing to the nose; broad back, deep chest, large jowls, short nose, dish face, and thin hair. He was brought from Massachusetts (bred by G. Parsons, Esq.) to the state of Ohio, where his blood is seen mixed through the great variety of breeds of that state, generally producing a

stock after his own kind, as well in colour as in beauty and size. He is three times as profitable as the common hog, because he will come to maturity in half the time, and will not consume half the food. He is fat from a pig until he is ready for the pickling tub, weighing from 200 to 250 at a year old. Grass being his natural food (as it would seem) he is not so subject to the sore throat, a disease produced by too much grazing, particularly on clover. He is said to undergo the fatigue of driving as well if not better than the common hog. This at first view would appear unreasonable from his bulky appearance; but when we consider that he is never poor, and habituated from a pig to carry his fat, increasing in strength as he increases in weight, he would not be so liable to lag as a hog quickly fattened would be. But this quality is of less importance, as the completion of the rail road will give a different direction to our pork.

We understand that Mr. Smith intends to exhibit a few of his hogs at the stock fair next Monday.

AGRICOLA.

Prices Current in New York, September 21.

Beevax, yellow, 18 a 20. *Cotton*, New Orleans, .152 a .181; Upland, .141 a .17; Alabama, .15 a .18. *Cotton Bagging*, Hemp, yd. .20 a .22; Flax, .18 a .19. *Flax*, American, 20 a 22. *Flaxseed*, 7 bush. clean, — a —; rough, — a —. *Flour*, N. York, bbl. 5.50 a 5.62; Canal, 5.68 a 5.87; Balt. Howard st. 6.50 a —; Rhd city mills, 6.75 a —; country, 5.75 a 6.00; Alexandria, 6.00 a 6.25; Fredericksburg, 5.75 a —; Petersburg, 6.00 a 6.25; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per hhd. 16.50 a —. *Grain*, Wheat, North, 1.12 a 1.16; Vir. 1.20 a 1.22; Rye, North, .78 a .80; Corn, Yel. North, .76 a .78. *Barley*, — a —; Oats, South and North, .34 a .35; Peas, white, dry, 7 bu. 9.00 a 11.00; Beans, 7 bu. 8.00 a 10.00; *Provisions*, Beef, mess, 10.75 a —; prime, 6.44 a 6.50; cargo, — a —; Pork, mess, bbl. 15.75 a 16.00, prime, 11.75 a 12.00; Lard, 9 a .104.

THE FULL BLOOD DURHAM SHORTHORN BULL HECTOR IS FOR SALE.

This bull was bred by Col. Powel. The beautiful imported bull Memnon was his sire, and Daphne his dam, both of which are recorded in the English Herd Book for 1829. Hector will be four years old in October next, has no bad habits, and is thought by a judicious breeder, who has seen the best of this stock in England and America, not surpassed by any he has seen. Col. Powel says, that in his late agricultural tour to England, he saw no stock superior to the ancestors of Hector. It is a sufficient recommendation of this bull, to state, that he does not in the least detract from the reputation of Col. Powel, as the most successful breeder of this stock in America.

The price of Hector is \$500 cash. Apply to Doctor H. Howard, Brookville, Maryland. Sept. 13.—47.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The New PINE, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2.00 per hundred.

EARLY SCARLET, LATE BOURBON PINE, and LARGE EARLY SCARLET, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, Downton, Grove End Scarlet, Bath Scarlet, Duke of Kent's Scarlet, Raspberry Hambrois, New Black Musk Hambrois, Wilnot Superb, Keene's Imperial, Keene's Large Scarlet, 50 cts. per dozen.

MELON, MELBURN CASTLE, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

L. I. HITCHCOCK,

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or overbearing Alpine Strawberry, without runners, BOTH RED AND WHITE, may be had at the American Farmer Establishment.—Price \$1 per dozen.

L. I. HITCHCOCK.

FINE CALVES.

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Shorthorn and half Abernethy. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

L. I. HITCHCOCK,

American Farmer Establishment.

HOLSTEIN CATTLE.

A bull and cow, each three years old, very handsome and the cow an excellent milker may be obtained by immediate application to the subscriber. Price of each, \$100.

Also, a bull calf of last spring, half Durham Shorthorn and half Holstein, a very superior animal. Price \$50.

The Holstein is a favorite breed of cattle at the celebrated Orange farm dairy near Baltimore, and they are held in equal esteem by Mr. Barney, whose dairy near Philadelphia is one of the best in the country and whose opportunities of judging are unsurpassed. Apply to

L. I. HITCHCOCK,

American Farmer Establishment.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

L. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

STRAWBERRY PLANTS.

The season for transplanting Strawberry Plants having nearly arrived, we offer for sale a large stock of fine size plants, among which are:—large early Scarlet, Pine Apple, Faulkner's Scarlet Pine, Downton, Lima, Wilnot's Superb, Roseberry, English Red Hambrois, Black Musk do. French Alpine, White and Red Monthly, &c. Price \$1.50 a \$5 per 100 plants.

SEEDS FOR FALL SOWING.

150 lbs. black and white Spanish Radish SEED.
40 lbs. summer and winter SPINACH.
100 lbs. prime London early York Cabbage SEED, and other kinds for fall sowing at \$2.50 per lb.
100 lbs. German greens or curled KAIL, (a superior kind, raised at our seed farm this year).

Early greys or Scotch KAIL, Brussels SPROUTS, &c. Our stock of Implements and field Seeds, is full and general, enabling us to fit out farmers with almost every article used on a farm at the shortest notice.

SINCLAIR & MOORE,

Aug. 23.

Corner Light and Pratt st.

WANTED.

All kinds of GRASS SEED, for which a fair price will be given, by

L. I. HITCHCOCK,

American Farmer Establishment.

POINTER DOGS.

Two full blood Pointer Puppies, ready for delivery, for sale at \$10 each, by

L. I. HITCHCOCK,
Amer. Farmer Establishment.

BALTIMORE PRICES CURRENT.

BALTIMORE MARKET.—There is some little improvement in flour, Howard street has been sold a fraction higher than last week, and holders are more firm, both in this and city mills, owing to the small quantity of the flour coming in. The wagon price of Howard street remains at \$6.00. Our extreme rate for white wheat can only be obtained for that of very superior quality for family flour.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crep, common, 3.50 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—Line yellow, 18.00 a 25.00.—Virginia 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00.

FLOUR—best white wheat family, \$6.75 a 7.25; super Howard street, 6.12 a 6.25; city mills, 6.00 a —; city mills extra 6.25 a —; CORN MEAL bbl 3 62½;—GRAIN, new red wheat 1.14 a 1.16; white do 1.20 a 1.30.—Corn, white, 61 a 65, yellow, 66 a 67;—Rye, 65 a 66.—OATS, 36 a 37.—BEANS, 75 a 80.—LEAS, 65 a 70.—CLOVER-SEED — a —.—TIMOTHY, 3.50 a 4.00 ORCHARD GRASS 3.00 a —.—Tall Meadow Oat Grass 2.25 a 2.50.—Herd's 1.00 a —.—Lucerne — a 37½ lb.—BARLEY, FLAXSEED 1.37 a 1.50.—COTTON, Va. 15 a 16; Lou. 17 a 19; Alab. 16 a 16½; Tenn. 15 a 16; N. Car. — a —; Upland 16 a 18.—WHEAT, Yel. bbls. 1st 1.30 a 1.32; in bbls 32 a 33.—Wool, Washed, Prime or Saxony Fleece 55 a 65; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 35 a 40; common 35 a 40. Unwashed, Prime or Saxony Fleece, 51 a 57; American Full Blood, 28 a 31; three quarters do. 26 a 28; half do. 25 a 26; quarter do. 25 a 26; common, 25 a 26; Heavy, Russia, \$170 a 180. Country, dew-rotted, 6 a 7 lb. water-rotted 7 a 8.—Feathers, 38 a 40;—Plaster Paris, per ton, 4.00 a 4.12½; ground, 1.50 a — bbl. Iron, gray pig for foundries per ton 33.00 a —; high pig for forges, per ton 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.75 a 6.50.—Oak wood, 3.00 a 3.25; Hickory, 4.00 a 4.50; Pine, 2.00.

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Editorial; Gideon B. Smith's Valedictory Address—Rhubarb Pies—Drink for Horses—On New Discoveries, with remarks by the editor—Foreign Markets—Farming in York County, Pennsylvania—Fallow, its various contradictory significations—Experiments on the Gathering of Corn—Observations preparatory to an Abridged Catalogue of Fruit Trees, in the collection of J. B. Van Mons, in Belgium, Europe—To preserve Winter Apples—On distemper among cattle—Byfield Hogs—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL.

Agricultural and Horticultural Establishment:

COMPRISING,
A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connection with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

25—An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorized to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

25—DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "L. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, OCT. 4, 1833.

The contract heretofore existing between the publisher of this paper and Gideon B. Smith, Esq. having expired by its own limitation, Mr. S. has retired from the Editorial desk, at which he has presided for the last three years, with the best wishes of the proprietor, and, no doubt, with those also of the patrons of the paper. The Editorial labors and responsibilities, with their attendant pains and pleasures, are assumed by less experienced, though, it is hoped, by competent hands. The indulgence of our readers is earnestly invoked for any and all errors that may be apparent in our efforts to please and instruct them. The high value of the American Farmer has always been acknowledged to consist rather in the contributions of its practical correspondents, than in the lucubrations of its editors. Arrangements have been made, which, it is believed, will secure for its columns, hereafter, a fair share of original contributions, as well as much excellent selected matter, not otherwise so easily accessible to its readers. We commence by asking our readers, one and all, earnestly but respectfully, to favor us with contributions for our columns, however short, and, to them, seemingly unimportant. We are confident, there is scarcely a reader of the Farmer who might not, if he would, send us something useful once a month, or oftener, concerning the treatment of his land, of his crop, of his animal's, his fruit trees or vines, or some department of his culture or domestic economy. No other man than the farmer has such a variety of subjects upon which to employ his pen, nor can any other topic be so easy to write usefully upon, as a man's daily employment and experience.

Farmers, and all other persons unaccustomed to write out their ideas, are apt to believe that they "cannot write well enough for publication." They are scarcely aware that the foundation of a good essay or letter is a subject which either they understand and design to treat instructively, or which they do not understand, and therefore desire information upon; that the execution of their design consists in merely a plain statement of what is known, or of what is desired; that, indeed, the whole art of this kind of writing consists in using *no art at all*, but in speaking "right on"—and if they want an illustration of the fact, let this article serve them as such.

GREYHOUNDS.—Observing, some weeks ago, mention made in the newspapers that the President of the United States had received from Mr. Davesac, now in Europe, four fine greyhounds, of a choice and valuable breed, the proprietor of the American Farmer Establishment wrote to the President, asking for a pair of the expected puppies, for his breeding farm near Baltimore, in order to propagate the breed pure in this country. The following letter was soon after received in reply, and subsequently the animals have been removed to the farm above mentioned, near Govan's-town, where they will be carefully kept for the purpose of propagating their species.

It may be here observed, that it is the purpose of the proprietor to procure and keep for sale, at his "Cottage Farm," as great a variety as possible of domestic animals, both useful and ornamental. Such as are wanted by farmers will claim his first attention, but the more rare species, such as ferrets, English rabbits, Guinea pigs, many varieties of useful or beautiful birds, gold fish, &c. will be added to the collection as fast as the necessary accommodations can be provided for them. In this collection of domestic animals, *none but the choicest and most valuable breeds and varieties will be kept.* The proprietor takes the liberty to request gentlemen who may have it in their power, to aid him in enlarging his collection, by contributing animals, of choice breeds or curious kinds,

or by giving him notice where such may be procured. Equal pains will be used by the proprietor, and the same assistance is respectfully asked of others, especially of gentlemen visiting foreign countries, to contribute to the collection of **PLANTS**, by sending him seeds, or other means of propagating them. All costs and charges will be paid, and fair compensation will at all times be cheerfully made for valuable specimens of either plants or animals for this establishment—and the proprietor takes this opportunity to return his thanks to the President for his valuable present.

Washington city, D. C.

Mr. HITCHCOCK: Aug. 27, 1833.

Dear Sir—The President desires me to say, that your favor has been received. Unfortunately since the arrival of the dogs three of the pups have been stolen, and a fourth died—the others were disposed of prior to the arrival of your letter. Finding that we cannot give them here that attention required, the President has given away two of the sluts, but retains the dog and one of the best sluts—she is now heavy with pup by the dog—they seem to be of fine blood, but not as large as I have seen them. As you have an establishment for the "rearing and dissemination of useful domestic animals," the President desires me to add that you can have the dog and slut, to stock your establishment, until he retires to his farm in Tennessee, when he will require a pair of their blood, or the dog and slut, the balance of increase for your benefit. The President has a great desire that the country should be benefited by this fine race of dogs, and particularly the prairies of the west, which are so well calculated for them, to prove beneficial to their owners. As for reciprocation the President thanks you, and desires nothing in return, you can have them as soon as sent for. It will give me pleasure some of these days to visit your establishment in Baltimore. The President tenders his regards to you.

In haste, I am, respectfully, your obt. serv't.

A. JACKSON, Jr.

MOWING WHEAT.—A writer in the Maine Farmer recommends mowing wheat, instead of reaping or eradling it. He contends, that, by this method, three-fourths of the usual time of harvesting is saved, at a season when time is particularly valuable; that a greater quantity of straw is saved, and that the dolling of the scythe the succeeding year, on the old stubble, is prevented.

A farmer near Albany, N. Y. raised on one acre and three-quarters of low, wet land, sixty-two and a half bushels of wheat. He attributes his success to two causes—sowing *two and a half bushels of seed to the acre*, and draining the land well by ditches twelve feet apart. He observes, particularly, that it was an old pasture lot, that he applied no manure to it, but "ploughed and harrowed it till it was mellow and fine."

Doctor Thomas C. Walker, of Baltimore county, has presented us with a specimen of an apple which he cultivates, and which he calls the *green stem*. It is of good size, very beautiful, and ripens in October. In the true spirit of a liberal farmer, he offers scions from his orchard, and we will forward him any requests for them that may be made, *without expense* to him or ourselves.

GRAPES.

Mr. HITCHCOCK: August 24th, 1833.

Dear Sir—I have a small vineyard of 1200 bearing vines, of the Madeira and Cape Grape, and wish to increase it from the Isabella grape, if I could be informed of the quality of wine made from them. I am satisfied, from the few I have, that they are great bearers: You will, therefore, confer a great favor on me, by giving me all the information you have in posses-

sion, respecting the quality of the wine made from them—either by letter, or through the medium of your useful paper, and oblige, Yours, respectfully,

ISAAC DUNNAR.

N. B. If you know any thing about the product of the Schuylkill Muscadelle, you will please let me know in the same way. I have a few of the vines that are bearing. I. D.

[The Isabella Grape has not been used to any extent for making wine; but the few trials that have been made of it, resulted very favorably. One gentleman in this city made some wine of the Isabella, and it was very poor for five years; but, when seven years old, it was very superior. Another gentleman, on Long Island, made some wine from it, which was very good. This is all the information I have on the subject.]

The Schuylkill Muscadelle, or Muscadine, as it is called, and the York Madeira, as it is still more commonly called, has been used for wine for many years in Pennsylvania, and makes very tolerable wine.—*Ed. Am. Farm.*

PICKLING.—A writer in the New England Farmer furnishes and recommends, from experience, the following recipe for pickling cucumbers:

"To each hundred of cucumbers put a pint of salt, and pour in boiling water sufficient to cover the whole. Cover them tight to prevent the steam from escaping, and in this condition let them stand for twenty-four hours. They are then to be taken out, and after being wiped perfectly dry, care being taken that the skin is not broken, placed in the jar in which they are to be kept. Boiling vinegar (if spice is to be used it should be boiled with the vinegar) is then to be put to them, the jar closed tight, and in a fortnight delicious hard pickles are produced, as green as the day they were upon the vines."

TO MAKE A FARMER.—The celebrated Marshall said that "attendance and attention will make any man a farmer." He was brought up to commerce, and did not give any attention to farming until a mature period of life. He then took a worn-out farm of three hundred acres near London. In three months he dismissed his bailiff, and performed, by the aid of study and practice, the duties of his office himself. He kept minutes of his operations, and published those from 1744 to 1777. He was acknowledged to be superior to most of his contemporary farmers. Arthur Young, too, was brought up to commerce. Middleton, in his View of the Agriculture of Middlesex, says one of the best farmers in that county was a retired tailor. The reason why those who have been brought up to other professions often make excellent farmers is that they have a real taste for agriculture, and enter it with a zeal to which those who have been brought up to it from infancy are strangers. Bakewell's advice to young farmers was "to see what others are doing," or, in other words, to read what others are doing.—*New York Farmer.*

PLOUGHING IN CLOVER FOR WHEAT AND CORN.—A farmer, in a communication in the Columbia Sentinel, says, by the aid of gypsum, and by ploughing in the clover, land can be brought into a high state of cultivation, allowing a rapid succession of crops, that are constantly improving. The farmers in his vicinity are fast adopting this easy and cheap method of enriching their farms. One ploughing, allowing the clover to ferment undisturbed, is considered to produce double the crops that two or more ploughings would.

FOREIGN MARKETS.

The Liverpool paper of Thursday, August 27, says that "the Cotton Market on Saturday and Monday has been quiet—the sales for the two days are about 4000 bags at Friday's prices." [The prices of Friday were an advance of 4 to 3d for American and Brazil, and 4 for other descriptions.]

AGRICULTURE.

(From the Farmers' Register.)

DISCOVERY OF MARL IN A NEW DISTRICT.

"Lime is the basis of every agricultural improvement."
Baron Hepburn's Survey of East Lothian.

Mankind have, in all ages and countries, been prone to seek deliverance from the curse originally inflicted on the race, that they should live by the sweat of their brow. This propensity often leads us to seize with avidity, any scheme, however wild, which has the charm of novelty, and promises great results, from little effort. It subjects us, in every department of life, to the vilest tricks of the vilest impostors.

The wisdom paid for by experience, often at an enormous price, may, sometimes, remedy the direct evils resulting from this principle. But, there are others growing out of an antagonist propensity, affecting the interests and prosperity of the community, perhaps, still more seriously. Having suffered ourselves, or having seen others suffer severely, by hastily adopting novel plans of improvement, which had nothing to recommend them, but the extravagant praises of their propagators, we sometimes become prejudiced against every change in conducting the concerns of life, and obstinately persist in old practices, merely because they have been *tried*, although daily witnessing and acknowledging their defects, rather than expose ourselves to ridicule for failure in an untried course.

The foregoing remarks should not be applied to the district for which this article is particularly intended, but with much qualification and allowance. The agriculturists of middle Virginia are generally intelligent and enterprising. They see and deplore their peculiar obstacles to improvement. Their efforts have, in a great measure, been thwarted or controlled by the privations of nature, or the still more galling and intolerable, because unjust, oppressive and relentless regulations of man. From the forced introduction of the African laborer, to the present day, we have felt the influence of governmental interference in the regulation of *domestic industry*; and we are still—ungrateful for the paternal interposition.

After yielding to gloomy forebodings in relation to the agriculture of his native land, so as, sometimes, almost to be driven to the painful alternative of emigration—to his feelings, nearly synonymous with expatriation—the writer thinks he can perceive brighter prospects before us. These hopes have, in a great measure, being excited by the perusal of "An Essay on Calcareous Manures," by Mr. Ruffin, of Prince George. The publication of this work, it is believed, will form a most important era in the agricultural history of the state. No man can understandingly read the book without perceiving the pleasing opportunity afforded the inhabitants of the tide-water country, of renovating their exhausted fields, and many of our agricultural brethren beyond the mountains, of almost indefinitely enriching their already fertile soil. The great value of lime, as a manure, has long been known in Europe, and indeed, the true secret of the surprisingly large crops of which we sometimes read, seems to consist in its use. It was reserved for Mr. Ruffin to point out, for some parts of our own country, exhaustless stores of this kind of manure, and to digest and develop a theory of its operations, which, it is believed, will hardly be controverted.

It has been commonly supposed, that calcareous matters to any valuable extent, were denied to that part of Virginia between tide-water and the mountains. The writer of this article having recently discovered considerably extensive beds of clay marl on his own land, and perceived the indications of it on the lands of others, feels impelled, however diffidently, to make a communication to the public, of the very small degree of information, as yet acquired on the subject by himself. He has known from his childhood that there

were very numerous pebbly concretions issuing from the clay in the gullies, and the crevices and fissures of the rocks, possessing the qualities of lime, inasmuch as they made a good cement for plastering, and would be rendered caustic by burning. But of these there were not enough to be valuable in the purposes of masonry, and of marl, the writer knew scarcely more than could be learned from the definition in a dictionary—not even knowing that lime was necessarily a constituent. On reading a few pages in Mr. Ruffin's book, he began to suspect that the clay in which those calcareous pebbles were found, was itself calcareous, and a very slight examination confirmed the suspicion.

Primary formations sometimes furnish ledges of magnesian limestone. Lime and its combinations, as the writer believes, are generally found in lands that are of secondary formation, that is, lands which have at some time formed the beds of seas or lakes, or undergone some radical change of structure since the creation. And this it is believed is the chief source whence lime is obtained. A stripe or vein of land of secondary formation, passes through Prince Edward county, from north to south, containing small veins of pit coal, coal slate, freestone, whinstone, large strata of sandstone, occasionally slightly calcareous, and other substances usually found in such lands. Many of the strata of rock are impregnated with common salt, epsom salt, and other saline matters. There are occasionally to be found very minute seams or veins of selenite (crystallized gypsum) though, as yet, none have been discovered large enough to become important in agriculture. It is highly probable, however, that those rocks which have this substance deposited in their crevices are, throughout, more or less impregnated with it.

As to the extent of this kind of land, the writer possesses no exact knowledge. His personal observation of it extends from a few miles to the north east of Willis's mountain in Buckingham, almost to the Roanoke in Mecklenburg. It is said to go many miles into North Carolina, crossing the river Hycow. But neither its southern or northern termination are known to the writer. In width it varies very much in different neighborhoods; in some places being eight or ten miles wide, and in others very narrow, or even apparently swallowed up in the hills of primary formation. A stranger travelling from Raine's tavern to Farmville, would, on looking westwardly from some points on the road, suppose himself in the vicinity of a vast river, from the depression of this land below the adjacent country. This kind of land is in that neighborhood, of very considerable width, where it has long borne the name of the clover forest country, from its propensity to produce, in wet summers, a species of annual clover, called the buffalo, of a beautiful and luxuriant growth. The seed of this clover, like those of cheat and many other plants, require much moisture, at a particular juncture, to excite them to vegetation, so that the crop is but seldom seen.

For many miles on the south side of the Appomattox, this stripe of land contracts to a much narrower space. It has been long since the writer was in the eastern end of Charlotte or the western end of Mecklenburg. But he is inclined to believe, from his recollection of the country, that, in those parts, this kind of land is very broad. It is generally accompanied by a very bold stratum of black rock, particularly striking whenever the writer has been able to trace it.

The character of the soil, generally, in this vein of land, has not stood high. The subsoil being commonly what is called pipe clay, it is very wet in winter, so much so, that in some parts roads could scarcely be made without the aid of extraneous materials. The soil however is more favorable to the production of grass than that of the adjacent lands of primary formation, and when apparently exhausted, more speedily furnishes materials for its own resuscitation.

The existence of lands half way between tide-water and the mountains, capable of furnishing calcareous manures, is a fact novel and unexpected—this

being a locality as little likely to enjoy such an advantage, as any in the state. So that, some ground is afforded for inferring that there may be other similar stripes of land, intersecting the state in such a manner as to afford the means for furnishing a sufficient supply of this best of all manures to all that portion of the state most needing it, whenever the facilities for transportation, by improving the navigation of our streams and constructing rail roads, shall have been sufficiently afforded. In reply to the question, how some parts of Scotland could have been so surprisingly improved within a few years, an old farmer of that country observed, that they owed it all to good roads and lime.

There can be little doubt, but that all that section so abundantly furnishing coal, in Goochland, in the lower end of Powhatan, and in Chesterfield, contains also bountiful supplies of marl. We would also expect to find it in the level swampy country to the south and south-west of Manchester.

In countries where this kind of manure has been fairly tried, there would be little need of urging its importance. Scotland, some thirty or forty years ago, was remarkable for the sterility of its soil, for the poverty of its inhabitants, and the scarcity of the means of subsistence. In agricultural skill and prosperity, and the high rate at which its lands are rented, it now stands, if not before all other countries in the world, at least in the foremost rank. All the agricultural writers of that country, ascribe to the instrumentality of lime, the chief agency in effecting this change. In our own state, until very recently, but little attention has been paid to this subject. Our forefathers having an abundance of virgin soil before them, thought little of troubling themselves about manures of any sort.—Instead of lending to the earth, with a view of drawing interest, we have been lavishly squandering the principal. And after the stock was nearly exhausted, we have found putrescent manures too unattainable in sufficient quantities, and too transient in their effects, to restore to the soil its pristine vigor. In some states of disease, diffusible stimulants serve, perhaps, only to burn out more hastily the remnants of vitality. The patient needs something permanent—tonics, which will produce a constitutional change, and afford scope for the action of stimulants. In this light, lime, as a manure, may be viewed. It is a necessary ingredient in the constitution of every good soil—a constituent in the formation of every vegetable, and we believe that scarcely a single plant could be brought to maturity if entirely deprived of its agency.

It is the common opinion of our geologists, that all the strata of rocks in this district of country, which pursue an extensive range, observe a course parallel to that of the Blue Ridge mountains. This opinion is, in the main, correct. The ledge of black rock, however, of which we have spoken above, so far as it has been traced, continues in about a due north and south direction, intersecting the general range of strata, at about an angle of forty-five degrees. This may readily be perceived from its outcroppings, which appear above ground, for a distance of more than fifteen miles; from the lands of the late John W. Eppes, Esq. of Buckingham, to several miles south of Prince Edward Court House. This we believe to be the case with others of the ledges of round black rock, which occasionally traverse the country. They appear to form braces, intersecting the ledges, which run northeast and southwest. The stripe of secondary land, of which we have been treating, seems generally to stretch from north to south, but the strata of rocks embedded in it go northeast and southwest, and dip towards the northwest, at right angles to their course. The outcroppings of ledges which may be observed on the western side of this strip of land, though interrupted by it for some distance, may be found again on the eastern side of it, preserving the same course, and having the same accompaniments. We thought it might not be amiss to record these observations, though entirely unconnected with our subject.

The writer felt bound to furnish to the public information which circumstances threw in his way, however imperfectly he has performed the task; because, he hoped it might cause others, better qualified, to investigate this important subject. To be placed before the public in this way, to him, is a novel and unpleasant predicament. But if he can thus excite those living in the same range of land with himself, or persons elsewhere, enjoying the same advantage, to attend to the subject of marl, he will consider himself highly rewarded.

It only remains for him to state that he has no experience of the benefits of marling, having but recently discovered the existence of marl on his land. He has spread about a thousand horse cart loads on about ten acres of land, dropping the loads in squares of twenty feet. Nearly all this land was in the second growth of trees, having long been considered totally exhausted, and very much gullied. He proposes to cultivate a part of this ground in corn and a part in cotton. Should it produce good crops, it may be considered a triumphant proof of the efficacy of marl, as none who view the land now, can be persuaded to augur favorably concerning it.

Our experience in marling, suffices to convince us that it is not one of the expedients to become rich without trouble. The operation is both expensive and laborious, especially in winter, on a wet soil and rotten substratum. And even should its avails equal the representations of writers on the subject, they are only to be attained by industry and perseverance, directed by some degree of skill. W. S. MORTON.

Near Farmville, February 22, 1833.

To the foregoing important communication, we will take the liberty of adding some extracts from several letters written by Dr. Morton on the same subject, but without any expectation of their being published, and before he suspected that the Farmers' Register would have an existence. The more minute descriptions which these extracts furnish, we are sure will be both interesting and useful to many who reside in the region through which our correspondent supposes this calcareous formation may be found. In the infancy of a discovery which promises to prove so important to an extensive district, the directions to those who desire to pursue the investigation, cannot be too full or minute. We trust that this will serve with Dr. M. to excuse us for thus extracting from his letters; our other patrons will not consider that any apology is required.

December 17th, 1832.

I presume it will excite in you as much pleasure as surprise, to learn, that in this part of the state, calcareous manures can be found, and possibly, in considerable abundance. The opinion has obtained currency, that in geological structure a primary formation prevails from the Blue Ridge to the head of tide-water. This is certainly correct in the main. There is, however, at least one slight exception. Having paid but little attention to geology, and been but a very moderate traveller, my information extends not far from home.

A strip or vein of land extends from near the residence of the late Dr. Hubbard, of Buckingham, a few miles to the northeast of Willis's mountain, to the neighborhood of Samuel L. Lockett, Esq. on the Roanoke, in Mecklenburg, evidently bearing all the evidences of secondary formation. How much farther it may extend each or either way, I know not. It contains free-stone, whin, coal slate, small veins of very fine coal, smooth quartz, river stone, marine and epsom salts, and many other matters, clearly indicating the secondary character. In some places there are numerous very small and irregular seams of calcareous matter, between the strata and in the broken crevices of the rock, and occasionally, deposits in the valleys, of calcareous clay, which, I suppose, may fairly come under the denomination of marl.

I have known, for many years,

that my land contained some modification of lime, and have frequently mended broken plastering about the house, with a cement made of calcareous pebbles found in the gullies. But having a very vague idea of marl, I never thought of seeking for it here, until I fortunately met with your work on calcareous manures. After meeting with this, I made search, and very readily found two deposits, which, I believe, contain lime enough to render them valuable as manure. I have, however, no means of accurately determining their quantity of lime. There are, also, very small veins of a calcareous appearance, containing crystals which I take to be gypsum—and extensive beds, near these, of a very fine clay of a marly appearance, which will not effervesce with muriatic acid, possibly on account of the presence of sulphuric. One would, on first sight, prefer this, as manure, to the clay, which does effervesce with muriatic acid.

I find the deposits, in every instance, lying under a superstratum of black gravel, and in the gullies above these deposits, it lies in minute seams, between the strata of rocks and in their crevices, from which, in very wet weather, it issues of the color and consistency of cream, and, on drying, forms a very hard cement. Wherever there is an accumulation of clay in the banks of the gullies, about such places, it seems to become marly; I suppose, from the exudation, so often occurring from those seams.

January 19th, 1833.

The hill side above my marl bed is composed of numerous strata of slaty sand-stone and coal slate, which I suppose to be slightly calcareous, their innumerable crevices and seams being filled with either chalky concretions, or soft calcareous matter. The water oozing from these strata to the foot of the hill, on coming in contact with pipe clay, is filtered through, and deposits lime. The following fact, I think, confirms this opinion. About the richest marl I have found, is contained in the scite of what was, within my recollection, a gully of considerable depth, now filled with clay marl; so that, I should judge, the marl is constantly forming in situations suitable for the deposit of lime.

The beds of marl, in so far as I have seen, are covered by beds of black gravel, the gravel having assumed about the same shapes and appearance, except in color, as the calcareous concretions below. From this, I would infer, that the gravel was once calcareous, though now probably chalybeate, and that the lime is constantly sinking, or in some other way wasting.

Lower down, or, to the eastward of the marl bed, I find in the crevices and fissures of the rock, thin layers of beautiful selenite, the crystals being so delicate, that they scarcely can be handled without demolition. In the vicinity, and to the east of this material, there are much fewer of the limy concretions; but a vast deal of rich looking clay, of a very unctuous feel, when wet. Possibly this clay may contain lime, combined with sulphuric acid. About these seams of selenite, much common salt is, in frosty dry weather, perceivable by the senses, and evinced by the propensity of sheep and other stock, to lick the banks. My recollection of chemical affinities does not, at this moment, enable me to say, whether this article would not decompose gypsum in any form.

January 24th, 1833.

I have endeavored to send about a fair sample of the marl, by cutting a block of it, which would just fit the box, from a good, but I think, not the best part of the bed. You will observe, that the calcareous matter appears to be deposited in the cracks and interstices of the clay, and that there is but little lime in the lumps of clay. The gravelly concretions in the top of the box, I think, are nearly all lime; they are very numerous in the marl bed, and you will doubtless find some of them in the block of marl sent you. They are generally surrounded by loose calcareous matter, whether given off from, or about to be added to them, I know not. This, I suppose, will constitute the chief

riches of my bed, as the pebbles are too hard to benefit the soil immediately, and the lumps of clay have but little lime in them. Though much interrupted by wet weather, I have spread five or six acres, aiming to put on about four hundred bushels to the acre. My soil is so wet in winter, that a pit dug, without an outlet, will generally remain full of water. And this winter it has been much wetter than usual. As soon as the earth dries sufficiently, I propose to plough the marled land with small ploughs at first, to avoid burying the marl too deep.

The selenite, thus far, is only interesting as a curiosity—as, being found only in irregular seams of slight thickness, the quantity is too small to be important in agriculture. I hope, however, to find a bed of marl containing this material, on the eastern side of my plantation, as it is here that I find the seams of selenite.

My other engagements have prevented my making searches for marl at a distance from home; I have, however, found superficial indications in several places, which look well, but the beds have not been explored.

February 22d, 1833.

Not long after I sent you the box of samples, I found another bed, or perhaps, more correctly, a continuation of the same bed, containing, apparently, much richer marl. It is much more friable, and the calcareous matter more intimately blended with the other matters. The extremely wet weather has, however, prevented my making much use of it.

I now suspect that there is a vast deal of marl in the vein of the country about which I have written so much.

The specimens mentioned above, were examined, and the following results obtained.

Of the mass of argillaceous earth, (which formed an unbroken cube of about seven inches,) three several specimens were taken, of near a pound each, and from each of these, after being pounded, smaller portions were again taken for examination. To the eye, it appeared that either was a fair sample of the argillaceous marl. Of these,
No. 1, 100 grs. yielded $9\frac{1}{2}$ of carb. of lime, = $9\frac{1}{2}$ pr. ct.
— 1, 300 — — 28 — — = $9\frac{1}{3}$ pr. ct.
— 2, 200 — — 24 — — = 12 pr. ct.
— 3, 400 — — 35 — — = 94 pr. ct.

The mass contained several of the hard concretions described by Dr. M. but no portion of them was included in these three samples, nor in any way served to affect the result. Of the concretions alone, a sample formed of three different lumps, yielded 64 hundredths of carbonate of lime.

The remarkable adhesiveness of the argillaceous earth, made it impossible to separate from it (by washing on a filtering paper,) all the acid used—and of course, all the lime dissolved in the acid, could not be removed. For this reason, any mode of examination except that used (the measurement of the carbonate acid gas evolved,) would have given a deceptive result. The same adhesiveness, and its consequences, prevented an examination of the clay marl for gypsum, which may well be supposed present in sufficient quantity to be useful as manure, in conjunction with the more abundant calcareous ingredient. To determine this question, we hope our friend Professor Cushing, who resides near this region, will direct his attention, and report the result of his examination.

The crystals sent were pure sulphate of lime, (selenite, or gypsum.) Two other samples were of mixtures of clay, with very large proportions of these crystals, of small size; but they were not analyzed, as the quantities found were stated to be too small for use as manure—and the process of separation, with the imperfect means that only could have been employed, would have been troublesome, and the result not exact.

We hope that the small proportion of the calcareous part of this marl reported, will not damp the zeal of the discoverer, or others who can use the same means

for improvement. The richest parts of the bed perhaps have not yet been exposed to the eye. The sources from which the fluid calcareous matter exudes, and which concretes by age, are probably much richer; and searching for them by boring would probably repay the labor. The hard lumps also may possibly be reduced by time and exposure, (as hard shells are when applied to acid soils,) so as greatly to increase the average richness of the whole quantity of the manure. But, at the worst, if the manure should generally contain only ten per cent. of calcareous matter, and can be cheaply applied in large quantities, it may be as valuable as other marl of thrice its strength, but more difficult of access. We regard the discovery of this mineral manure, in this particular region, as holding out a prospect of the most important and beneficial consequences to the agricultural improvement of Virginia.—[Ed. Farm. Reg.]

GYPSUM FROM SMYTH COUNTY.

A friend who recently travelled through the southwestern part of Virginia, has brought to us for examination a specimen of gypsum obtained in Smyth county, where, as he was informed, it is found in great quantity. The lump before us is very pure, and of a texture much more soft and yielding than the gypsum from Nova Scotia, and therefore the more easily prepared for manure. If our friend was correctly informed as to the abundance of this mineral, and if facilities should hereafter be afforded for its transportation, it will not only prove valuable to the farmers of Smyth county, but to many who are hundreds of miles distant from the quarries.

EXTIRPATING SASSAFRAS.

DEAR SIR:—Scotland Neck, Sept. 23, 1833.

In answer to the queries of Anti-sassafras, extracted in the Farmer, from the Farmer's Register—if Anti-sassafras will cut all the sassafras bushes down in the spring of the year, that are of any size, and pasture the land with cattle and sheep for two or three years in succession, it will effectually destroy them. I had a piece of land thickly set with them; I pastured it with cattle and sheep, the years 1831 and 1832, to destroy it; in the fall of 1832 I broke it up and sowed it with wheat; I rode over it a few weeks past and could not see a single sprout of it. Three years will effectually destroy it, and I think two is sufficient. Sheep and cattle are very fond of the sprouts, and they continue to trim them off as soon as they make their appearance. To satisfy any person of the correctness of this method, let him not see, when passing along a lane where the field is infested with this growth,—a plenty may be seen in the enclosure, but not one outside the field, unless it is too high for cattle to trim the leaves off. I am satisfied it is a great impoverisher. Respectfully, your obt. serv't.

WM. R. SMITH, SENT.

HORTICULTURE.

(For the American Farmer.)

I copy the following account of the Olive from Kenrick's New American Orchardist:

OLIVE.—*Olea Europæa*.

"The olive is a low, evergreen, branching tree, throwing out numerous suckers from its roots; it rises to the height of from twenty-five to thirty feet, its leaves are stiff, narrow, simple, very entire, and more or less lanceolate in different varieties, dull green above and whitish below. The flowers are in small axillary branches of a yellowish white. The berry* is

* Berry and drupe. Our author confounds these terms. The subjoined definitions from botanical authors of established reputation, will show that they are not synonymous.

BERRY. A succulent or pulpy pericarp without valves containing naked seeds.

DRUPE. A kind of fruit consisting of a fleshy succu-

lar drupe of a black violet, or red, sometimes white; its form oval, oblong, but varying according to the species; [variety] its hard, thick, fleshy pulp incloses a stone.

"The olive requires a greater degree of heat than the vine, but not so great as the orange. It will not flourish within the tropics. Porteau informs us that in Europe, forty-five degrees of northern latitude is the extreme boundary for the cultivation of the olive. He also informs us that during his abode in the equatorial regions of America, in the latitude of seventeen degrees north, he saw the olive trees thirty feet in height, they grew, but they never produced fruit. The olive has been cultivated from time immemorial in Egypt and Barbary, and in every part of Europe and Asia where the soil [and climate] is favorable to its growth; it is naturalized to the South of France, Spain, and Italy. The trees are said to live to an incredible age."

After describing or mentioning seventeen varieties, he says: "By the aid of the researches of the Hon. H. A. S. Dearborn, I am enabled to give an account of two other varieties. They are two varieties of the most hardy description, and the most important of all for the United States. In the southern part of the Crimea which lies between the latitude of forty-four degrees and forty-six degrees, two varieties of olives have been discovered which have existed there for centuries. They yield great crops and resist the frost. The trees of one of these varieties is of a pyramidal form and produces an oval fruit; the other has pendant branches and a large heart-shaped berry. These olives have been cultivated in the Russian Imperial Garden of Nikita to preserve and multiply the species [varieties] with plants which had been received from Provence, and have endured the rigorous winters of 1825 and 1826, while those of Provence in the same exposure, perished even to the root. Measures have been recently taken in France for the introduction into that country of 'these two precious varieties which are capable of resisting ten or twelve degrees of cold below the zero of Reaumur's thermometer'—equal to five degrees above the zero of Fahrenheit. [See vol. viii. page 285, N. E. Farmer.]"

Heber, (afterwards Bishop of Calcutta) in his Travels in the Crimea also mentions the olive: "Below Koriss, on the plains above the sea coast, are some fine olive trees." Life, vol. 1. p. 258. Again, "Percep—we here with great regret quitted the Crimea, and its pleasing inhabitants, it was really like being turned out of Paradise, when we abandoned these beautiful mountains, and again found ourselves in the vast green desert which had before tired us so thoroughly; when we changed olives and cypresses, clear water and fresh milk, for the reeds, long grass, and the drainings of marshes" &c. p. 262.

The degrees of frost which these olives can withstand, appear not to be well known. Winter in the Crimea however, is very severe. The following remarks on this subject, are also from Heber; and when we bear in mind that this peninsula is on the north of the Black sea, partly enclosed by the sea of Asoph, and chilled by the waters of the Don and the Dnieper, it is probable that the mercury in Fahrenheit must often be several degrees below zero.

"All the countries bordering on the Euxine sea are still subject to an annual severity of winter, of which (though in a far higher latitude) the inhabitants of [Britain] can hardly form an idea." p. 532.

"The whole sea of Asoph is annually frozen in November, and is seldom navigable earlier than April" p. 533.

"This remarkable severity of climate on the northern shores of the Euxine, may induce us to give a proportionate faith to what the ancients assure us of

lent rind, and containing a hard stone in the middle.—Example: the olive—it is berry-like as in the cherry, or dry as in the walnut.

Our author also confounds the terms, species and varieties. *Olea Europæa* consists of but one species, though it may include an indefinite number of varieties.

its southern and eastern shores."—"Sirabo accounts for Homer's ignorance of Paphlagonia, 'because this region was inaccessible, through its severity of climate.'" p. 533. This country is on the south shore of the Black sea or Euxine, and several degrees further south than the Crimea.

I have been thus particular in pointing out the severities of that climate, to show the great probability that those olive trees would bear the winters of our middle or eastern states; and that some Horticulturist may be encouraged to import them into this country, for should the enterprise succeed, it must greatly redound to the wealth and the glory of that individual.

The following additional extract from Kenrick will show how much France has to hope from the introduction of these varieties into her territories:

"The olive was extensively cultivated in France; but the winters of 1709, 1766 and 1787 were dreadfully destructive; the dreadful winter of 1789 destroyed all the olives between Arles and Aix, where in 1757, oil was produced to the amount of 300,000 francs. During the intensely cold winter of 1820 nearly every tree in Provence was killed. Under these discouragements its cultivation is in that country principally confined to a portion of the territories of Provence and Languedoc;—to the departments of the eastern Pyrenees and the Maritime Alps: not one fourth part of the oil consumed in France is now produced in the country, and it is stated that more than 50,000,000 francs are annually paid for supplies from Spain, Italy and the Levant."

The European Cypress from the Mediterranean is too tender to bear the winters of our middle states; but if seeds could be obtained from the Crimea, that fine tree might without doubt, be successfully introduced.

AN AMERICAN FARMER.

(From the Genesee Farmer.)

CULTURE OF SILK.

Marcellus, Sept. 10, 1833.

MR. L. TUCKER,—I send herewith, for publication in the Genesee Farmer, a copy of a letter, lately written by myself to a friend of mine, in the county of Oneida. The subject of it is the culture of silk, with reference to its general introduction in this section of the country. As I have, not unfrequently, addressed the readers of the Farmer on the same subject, I am aware, they may accuse me of bringing it too often to their consideration. My apology, if apology be needed, is, that I consider this as a subject of deep interest to the community. The silk-growing business is already commenced, by many praise-worthy citizens in western New-York: it must, and I am sure, it will, go on. Yet, in the present stage of its existence, while no profits are realized, and its advantages are seen only at a distance, and perhaps through a false glass, it is necessary, in order to keep up the excitement, that the bellows be kept constantly blowing. At the bellows, therefore, I take my station, and there I hope to stand, until the object is secured.

When once mulberry foliage shall have become plenty in the country, and the business of silk-making, shall have assumed the attitude which belongs to it, there will be no farther need of individual exertion to keep it in motion, and accelerate its progress. The business will then recommend itself; and, as the fire will burn spontaneously, there will be no need of continuing the use of the bellows. DAN. BRADLEY.

Copy of a letter to Samuel Royce, Esq. of Clinton Village, in the county of Oneida, on the Culture of Silk, and its application to this country.

Marcellus, Sept. 9, 1833.

DEAR SIR—Since I left your hospitable mansion, into which, while a sick man, it was recently my good fortune to be cast, I have reflected on the conversation that passed between us, relative to the culture of silk, and its adaptation to the circumstances and

condition of your family. It appears to me, that the subject, in relation only to your own interest, merits greater attention than we then gave to it.

For several years, I have had the culture of silk, with reference to its general introduction in the United States, and especially in this section of the country, under my own special consideration, and have given great attention to the subject. Of course, I have kept myself in the constant pursuit of such information as might give me light in relation to this subject. My success in this has been less than I hoped it would be; yet I flatter myself, that I have acquired some knowledge of the silk business, that may be useful to my fellow citizens, and to yourself, and your family in particular. So far as relates to nurturing silk worms, and converting their produce into merchantable commodities, I yet lack the best of all knowledge, that is, such as is derived from practical experience. But, sir, such knowledge as I have, it will give me great pleasure to impart to you, if it can do you any good, or afford you any satisfaction.

In the first place, permit me to say, the question is settled beyond all dispute, that silk may be produced in the United States, and in western New York particularly, to as great advantage as in any part of the world. That vast quantities of it are produced *somewhere*, we all know; and we know too that the annual consumption of this article in the United States alone, amounts in value to little or nothing less than eight millions of dollars. We are informed, by unquestionable authorities, that, in whatever parts of the world the silk growing business prevails, it is there considered one of the most productive occupations, yielding to industry a greater reward than almost any thing else.

As my subject is vast, I must pass over it with all practicable brevity. It need not be considered, that there is any obstacle in the way of making silk to great profit, in the village of Clinton, or any where else, within the bounds of our happy country. If, as is known to be the fact, it is a profitable business, in other countries, no reason can be seen why it may not be equally so in this. In regard to the expediency of introducing it at your own premises, permit me to say, I scarcely know of another private situation, at which it could be introduced, under circumstances so felicitous. I need not assign my reasons for thinking so. The most of them will readily occur to your own mind. I will, therefore, say only that, so far as relates to house-room, for the accommodation of silk-worms, you are already happily prepared for carrying on the silk-making business, on a large scale. We have information, derived from experience, and entitled to full credence, that a room, eighty feet by forty, will be sufficient to accommodate a million of worms. The large building which you occupy, including the numerous apartments of its lower and upper stories, will afford that amount of space, and much more. A portion of it, sufficient to accommodate a million of worms, or more, can be spared for that use, during the short time that worms operate, and yet the family, although it may be numerous, experience no serious inconvenience.

At a moderate and safe calculation, 3,000 worms will produce a pound of reeled silk; of course, a million will produce 333 $\frac{1}{3}$ pounds. The value of this, at \$5 a pound, (the lowest estimated value,) will be \$1,666 66-100. But we are told that, if silk is well reeled, as it always may be, with proper care and attention, it is now worth, in the American markets, from seven to ten dollars a pound. The amount of labor, requisite, for taking care of a million of worms, every thing included, is estimated as follows: for the first week two persons; for the second week four; for the third eight; and the remainder of the time, which may be ten days or more, from sixteen to twenty. The most of these laborers may be boys and girls, women, and aged and decrepit people. It will always be easy to hire enough of such laborers, and at trifling wages. You will reflect, dear sir, that *here* there is no expense of carts, wagons, ploughs, harrows, harnesses,

oxen, horses, &c. And surely, there will be no necessity of employing *whiskey* as an agent, in carrying on this business.

The quantity of land, necessary to be employed for the growth of Mulberry trees, will not be great. Gideon B. Smith, Esq. of Baltimore, who has been taught by experience, tells us, that a full grown mulberry tree will produce foliage enough to feed 5,000 worms. It then a million are to be fed, the number of full grown trees, must be two hundred. But the same gentleman remarks that, in order to guard against failures, and losses of leaves which may happen after they are picked, and also to save the trees from excessive cropping, it is better to have double the number of trees, that is, two trees for every 5,000 worms.

If it be intended, that Mulberry trees shall attain to all the growth of which they are susceptible, it will, doubtless, be necessary to set them at as great distances from each other, as apples trees are usually set in orchards, perhaps greater. This, we know, is practiced in many places, and it may be the better way; yet, it is not the way that I should recommend to planters, in this section of the country. I think it better to encumber no more ground with mulberry trees, than will be necessary for the intended purposes. If set in a form much more dense than that of apple orchards, they will grow, for several years, to perfect advantage, and in the mean time, produce as much foliage, as if set in any other form. Subsequently, if it be desired to give room to some of them for greater extensions; they may be thinned. I have advised many of my fellow citizens, who have sought to me for advice, to set mulberry trees, if intended for standards, at the distance of ten or twelve feet apart. I know not *now* how to give better advice. You will see, my plan is, to have the mulberry trees, after a year or two, exclusively occupy the ground. At first, for one or two seasons, potatoes, or other crops, may grow among them. Subsequently, tillage should cease, and nothing be required of the soil, but the produce of mulberry foliage.

There is another manner of setting mulberry trees, which is much recommended: that is, to set them in hedges, or otherwise in a form so dense, as to give at the rate of 3,000 trees, or nearly that number, to an acre. Persons, commencing mulberry plantations, will do well to occupy a portion of the ground allotted to that use, with trees planted in this manner. The produce of such plantations, is said to be very great. I have little doubt of the fact, that an acre of good soil, planted with mulberry trees, three-fourths of it at ten or twelve feet distances, the remainder in hedges, or otherwise in a dense form, will, after the trees have been set five or six years, and well taken care of, produce foliage enough to support a million of worms. Some writers say, an acre may supply "two millions." I dare not put the estimate so high. It is enough to say, one million. There are very few farms in the country, whose produce, in the ordinary way of farming, exceeds, in value, that of *one* such acre. If such be the facts, how great are the inducements to engage in the silk business? Surely, many thousands of our industrious citizens, should hasten to embark in an enterprise, so full of promise.

Although I am perfectly sincere in making these remarks, yet there are in society many individuals whom I could not advise to meddle at all with the silk business. For instance, if the man be a lover of ease, and given to indolence; if he be careless and slack in his manner of conducting business; if his faith be weak, so that he cannot labor with a view to objects unseen and placed at some distance; or if he lack courage to encounter difficulties and disappointments, and be hasty to relinquish pursuits, if not attended with immediate success, he should by no means be advised to undertake the culture of silk. If he do, it is certain he will not succeed in it. It scarcely need be said, he will succeed little or no better in any thing else.

Think not, respected sir, that I harbor the slightest suspicion that either of these characteristics belong to you, or any of your household. I know better. Yet for the benefit of others who may hear, I have said these things; and I say farther, that it will avail nothing to plant mulberry trees, unless the ground on which they are to grow, be well fenced and secured, especially while the trees are small, against the intrusion of cattle, horses, sheep, &c. The trees too, while young, will require some cultivation, to render them thrifty and rapid in their growth.

There can be no doubt, that the growth and manufacture of silk, will, in a short time, become general in this country, and that silk factories will abound among us, as those of cotton and wool do now. This new branch of industry will add much to the resources of the country, and become the happy means of improving the condition of many thousands of our citizens. All such farmers, as are too limited in their means of subsistence, may easily improve their condition, by cultivating mulberry plantations, and causing their foliage to be converted into silk. This may be done, without interfering, in the least, with the ordinary resources of their farms. And let it be considered that, as a gentleman of the south has recently remarked, "Silk always was, is now, and always will be a cash article."

The families of many poor widows and orphan children, might be relieved from the sufferings of poverty, if they could have employment, in the simple, easy, and healthy business of making silk. Ought not farmers, who have land enough to be spared for the growth of mulberry trees, to consider this, and plant freely, that the poor of the land may have the means of profitable employment?

We are informed that in one of the eastern states, a young lady not long since, took a mulberry plantation to be managed by herself on shares, and that, at the expense only of her own labor six or seven weeks, she realised to herself \$108, rendering the like sum to the owner. This was done by an exchange of work, so that when her pressure came on, she had help enough provided and paid for. Is not this simple tale, the truth of which, I suppose, is not to be questioned, full of instruction to the farmers of this country? How much good they might do, by multiplying mulberry plantations! Let them destroy half the apple trees, which now grow to no useful purpose, in their orchards, and supply their places with mulberry trees.

The culture of silk will apply, with peculiar felicity, to such families as contain many children. A southern planter of experience in the business of silk-making, in a late communication on the subject, remarks that, "for every child of a family, aged from twelve to thirteen years, and employed a few weeks only, in gathering leaves, and taking care of silk-worms, \$300 may be realized." If so, how many families that are now poor, might become affluent?

If manual labor, in any form, can be successfully connected with seminaries and schools of learning, it appears to me, the culture of silk, including the reeling process, and perhaps some other branches of its manufacture, offers a business the best of all adapted to such purposes. No other can be thought of so happily suited to the strength, capacities, and amusements of pupils in such institutions. There is no other in which they can be employed to equal advantage. This business is adapted to both sexes alike; and it may be so planned as to afford a pleasant and profitable employment for the pupils during the whole year.

To all public houses of pauperism, also, the culture of silk is most happily adapted. Such institutions, of which there are many in this state, might, in a short time, support themselves; and perhaps do more, if this branch of industry were properly introduced, and prosecuted with courage and ability. It is, beyond dispute, the indispensable duty of all superintendents of county poor houses to institute, without delay, mulberry plantations for their use.

Capitalists need not the profits that may be derived from the growth and manufacture of silk; neither, at present, is their capital needed for that use. Hereafter, it may be otherwise. It is a peculiar excellence of the business which forms the subject of this discourse, that it requires very little capital to gain access to it. To families of moderate fortune, and especially those whose means of support are too limited, this business offers relief; and thousands there are who should bid it a hearty welcome.

I have, dear sir, already gone far beyond the bounds which I had prescribed to myself when I commenced writing; and certain it is, I have taxed my feeble strength too severely: and yet I have arrived only at the middle of my subject. I find myself compelled to pass over many interesting considerations which I intended to introduce.

It has been supposed, that there was something quite mystical in the silk-making business, and that it required more than ordinary ingenuity to become capable of managing its complicated details. We are now assured, that it is not so; that the business, in most of its details, is remarkably simple and easy; that even the art of reeling, which has been supposed very difficult, is easily attained, and may be practiced, with perfect success, in any of our families. We are informed, that reels, after the models of those used in Europe, have been constructed and improved, by our own artists, and are now for sale in this country, at the low price of \$12. Indeed, we are informed, that a gentleman of the name of Brooks, a citizen of Massachusetts, has recently invented a reel for silk, on a plan entirely new; that this reel is found to possess much greater excellence, than any ever used in Europe, and is happily adapted to the use of private families. You see, every thing conspires to encourage the Mulberry planter, and the silk grower.

You will permit me, sir, in closing this letter, to reiterate my advice to you and your household, to introduce the reading of the *Genesee Farmer*. This paper is abroad, in nearly all the land, and doing an immense deal of good. I have not been informed, however, that it circulates in the county of Oneida. Sure I am, that every Mulberry planter, every practical husbandman, and every horticulturist, who will read it attentively, will derive from it a tenfold remuneration of its cost. It is printed at Rochester, and published by L. Tucker & Co., proprietors. Judge Bucl conducts its editorial department. With great respect,
Yours, &c. DAN BRADLEY.

Samuel Royce, Esq.

RURAL ECONOMY.

AGRICULTURAL SCHOOL.

Bucks County, Penn. }

I. I. HITCHCOCK, Esq. Sept. 27, 1833. }

DEAR SIR—Since a late inquiry in the *Farmer*, of, "where is there to be found an agricultural school?" I have received and read with particular pleasure, the prospectus of a new establishment in Pennsylvania, called "the Bristol Collegiate Institution;" and I send you the results of my reflections relative to it, in reply to your inquiry, and for the information of your readers who interest themselves in the best means of promoting the united cause of agriculture and education.

I think the Institution referred to may be called an agricultural school, as well from its location, as from the devotion of a certain portion of the time of all the students to the practical operations of agriculture and the mechanic arts. It is, in many of its features, a Fellenberg Institution; its locality is a large and fertile farm, of near four hundred acres, on the banks of the Delaware, about three miles from the borough of Bristol, in Bucks county, Pennsylvania. Its first course of studies commences on the first Wednesday of October of this year.

Thus is again open, in Bucks county, the gratifying

prospect to Pennsylvania and to the Union, of an appropriate education for the sons of farmers and mechanics, and of all whose parents and guardians are convinced of the advantages of adopting regular habits of useful industry, as an essential ingredient in every system of education under a republican government.

The portion of time devoted to agriculture and to manual labor, is three hours, on five days of the week, and from three to five hours of every Saturday afternoon. The proceeds of the industry of the portions of five days, is applied exclusively to the uses of the individual students; and the proceeds of the portion of every Saturday afternoon, is applied to the benefit of the Institution—the exercises consisting chiefly in the cultivation of the grounds and garden.

The application of these specified portions of time is equally obligatory on every class of students; but the expenses of tuition are made to apply to the circumstances of all classes of the community, from the affluent to those who are without any pecuniary means. [A small pamphlet has been published by the Directors, containing the details.]

A particular reference seems to be made to the preparation of young men for Ministers of the Protestant Episcopal Church; but the basis of the Institution is liberal, and its benefits are equally open to all. Its government is in the hands of highly respectable, enlightened and wealthy citizens. It seems to be the result of an union of effort by practical men, to produce what individual capital was not adequate to, and what, I fear, there is no prospect for obtaining in Pennsylvania from Legislative provision—that is, an establishment in the country, combining all the benefits of a city education, without any of its great drawbacks and disadvantages, and a connection of agricultural and mechanical science and practice, with all the usual intellectual attainments. These great objects seem to be united in the plan of this new Institution, which, in its earliest efforts, will, I doubt not, see the expediency of an extension of the agricultural department, by the introduction of a chair of agriculture, combining, as may well be done on its extensive farm, all the illustrations of practice, with the theory of the science, and preparing by a regular course of field and garden culture, boys, as well for their future destination of proprietors and tenants, as for overseers, superintendants, gardeners, and every variety of rural laborers.

The principal building, as you pass it on the Delaware, near Bristol, has a very imposing appearance; its extent is adapted to almost any required number of students, and its convenience of access from all parts of the Union is unrivalled, being in the straits through which, by water, every thing must pass going from north to south; and by land, the farm extends to the new rail road now in progress from Philadelphia to New York.

The results to our country have never yet been seen, of the union of habitual agricultural and mechanical industry as a branch of education, with all the blessings of religious, moral and intellectual culture. If this institution shall be sustained by public opinion, these results will, I believe, be fairly and fully illustrated in it. The President is well known as a pious, learned and zealous minister of the Gospel. He is the Rector of the Church, which is a part of the institution—so that religion and learning unite in its foundation, and all the forms of the Episcopal Church will be regularly observed, while the free admission of all sects will prevent any exclusively sectarian feelings.

Morality is a very prominent feature in the rules and regulations of the institution, and ardent spirits are expressly made an object of disgust and detestation by the form of subscription required of each student on his admission.

All the usual collegiate and classical studies, as well as those which are preparatory, are adopted. No daily scenes of vice, folly, extravagance, dissipation, or idleness, can cause early contamination of mind, or corruption of morals; but, in lieu of the evil first impressions

which all cities produce, will be substituted the early and useful moral influences on the mind and heart which arise from a familiarity with the beauties and bounties of creation. Insubordination, revolts, and refractory dispositions, so frequent in universities, in which no useful labor fills up the intervals of study, will be unknown; regular habits of industry, with a love of useful occupation, will be early formed, and whatever may be said of systems, these are the best practical parts of every system. In fine, it will result, I think, from the blessings of this and similar institutions which are rising up around us, that it is not so much to our form of government to which we shall be indebted for our permanence and prosperity as a nation, as to our institutions for education—in which must be united the principles of religion, morality, science and industry. These, under any form of government, are the only solid foundations of society. A review by every reflecting man of his youthful life, and of his first impressions, will perhaps satisfy him, that these have generally determined his destiny, for good or for evil, and will induce him, as his most important duty, to select for the succeeding generation, that system of education which unites the blessings of health and industrious habits with intellectual attainments, in scenes remote from the dangerous associations and associations of crowded and corrupted cities.

Very respectfully, your most obt. serv't,

A. M.

(From the Farmers' Assistant.)

CIDER.

To make the best cider, there are several requisites. The apples should be of one sort, and of the best kind. They should be perfectly sound, ripe, and clean.—Those which are shook from the trees by a gentle shaking are best; and all knotty, wormy, and rotten ones should be rejected. Such as are not of this prime rate may be made into common cider.

The apples thus selected should be spread on a floor, raised from the ground, with a cover over it, and the sides enclosed. Here they are to lie for the purpose of sweating. They should lie about four or five days, when the weather is dry and warm; but longer, when wet and cool; and let them be dried, by exposure to the sun, the rotten ones thrown away, and ground immediately in a clean mill.

When the cheese is made, it should stand about twelve or fourteen hours, before the press is put upon it; for this delay in pressing will greatly improve the cider.

The best plan of making the cheese, is to ent off the butt ends of the straw, and lay it along on the four sides, with the cut ends projecting out about four inches, on each side, beyond the extent intended to be given the cheese: Then, with a straight smooth board, made for the purpose, about five inches wide, and of sufficient length, you commence forming one side of the layer of pomace, by building it up compactly against the board, which is set upright on its edge. When that side is formed, take away the board, and in the same way proceed to form the next, and so on till the four sides are built up. Then lay on another layer of straw, as before, and proceed with the board to build up the four sides of the next layer of pomace, and thus you proceed building up the cheese as nearly perpendicular as possible.

In this way, the cheese, by having the straw to lap well in the middle, or centre, is in no danger of bursting open in pressing, as is often the case when large cheeses are made in the common way, with the straw brought round the outside of each layer of the pomace. We have seen cheeses made, in the manner here recommended, large enough to run off twenty-four barrels of cider.

The first and last running of a cheese should be put by itself, as it is not so good as the rest. In pouring the cider into the cask, let there be a strainer of coarse cloth in the bottom of the funnel, to keep out

the pomace. New casks, or those which have just been emptied of brandy, are the best. If old casks are to be used, it is of the utmost importance to have them perfectly clean. When they are first emptied, they should be well washed, and then bunged up tight. For want of this precaution, they often become musty, and then they spoil all the liquor afterwards put into them.

The only successful method of cleansing musty casks, we have ever heard of, is that communicated by M. *Lenormandes*, which he learned of a French peasant, as appears in "The Annals of Arts and Manufactures," published in France, and is as follows:

"Make up in quantity what will be equal to about a sixteenth part of what the cask to be cleansed will hold, of the following ingredients, *viz*: about four pounds of common salt, and one of alum, added to a mixture of water with cow dung, fresh dropped from a cow, (no other will answer) put the whole in a pot and heat it almost to boiling, stirring it constantly; pour it thus heated into the cask, and shake it well, turning it round on every side, and continue shaking it every hour or two, taking out the bung while shaking, lest it burst.

"When its contents have become cold, pour them out, and rinse it clean, then pour in some hot water, in which about two pounds more of salt, and one of alum, have been dissolved; shake the cask well on every side, as before, and while the water is yet warm pour it out; drain the cask, and bung it up tight, till wanted for use.

"This, (says Mr. L.) will not only make the cask perfectly sweet, but will even restore wine to sweetness again, that has been injured by being put in a musty cask."

When casks have more or less of a sour smell, Mr. *L'Homedieu* directs to take at the rate of about a pint of unslacked lime for a barrel, put it in, and pour in three or four gallons of hot water, or more for a larger cask; shake it well on every side, giving it some vent, as before mentioned; let it stand till cooled, and then rinse it with cold water. Repeat the operation, if the cask does not then smell perfectly sweet. Most probably, a suitable quantity of wood-ashes would more effectually eradicate any sourness in the cask.

After it has been filled with the liquor, the next process is the fermentation, and this is a matter of some nicety.

There are three fermentations, the vinous, the acid, and the putrid. When the first ceases the second begins, and when that ceases the third begins. The first is only necessary for cider, and care must be taken to stop all further fermentation, as soon as this is over. This is known by the liquor ceasing to throw up little bubbles to the top. Then too all the pomace is raised up, and, if suffered to remain there, will again sink to the bottom and render the liquor turbid. Let this time then be carefully observed, and let the liquor then be drawn off, not too closely, and put into other clean casks, or bottled, closed tight, and set away in a cool cellar. Let a gallon of French brandy be added to every barrel.

But, to further improve it, let it undergo a further operation, as follows: As you draw off the cider from the first casks, put it into fresh ones, filling each about three-quarters full, and set them away till winter; at which time let them be exposed to the frosts, until one-half or even two-thirds of the contents of each are frozen; give the liquor some vent while freezing; draw off the unfrozen part, bottle it, or put it in clean new casks, and set it away in a cool cellar, and let it remain there for two or three years, and it will then nearly equal the best wines.

If it should require clarifying, let it be done with isinglass, or it may be leached through a tub of powdered charcoal, which will render it very clear; but the tub should be covered close to prevent any evaporation of the spirit. To clarify it with isinglass, pour

into each vessel about a pint of the infusion, of about sixty grains of the most transparent of this glue in a little white wine and rain or river water, stirred well together, after being strained through a linen cloth. This viscous substance spreads over the surface of the liquor, and carries all the dregs with it to the bottom.

Some boil cider in the spring, for summer-use; but the practice is a very bad one, particularly when boiled in brass kettles. If any boiling be ever proper for cider, it must be as it comes from the press. This is the proper method of treating water cider, or that which is extracted from the pomace after the cheese has been pressed. The pomace is put into casks in the evening, with a due proportion of warm water thrown on it, and in the morning it is made into a cheese, and pressed off again; the liquor is then to be boiled till all the scum has risen and been skimmed off, and then it is to be put away in casks in a cool cellar, and treated like other cider. It ferments but little, and makes a pleasant drink for the next summer, if bottled, or otherwise kept well. Perhaps this would be a good method of treating all cider.

Cider may be kept for years in casks, without fermenting, by burying them deeply under ground, or immersing them in spring water; and when taken up the cider will be very fine.

A drink, called *cider royal*, is made of the best running of the cheese, well clarified, with six or eight gallons of French brandy, or good cider brandy, added to a barrel. Let the vessel be filled full, bunged tight, and set in a cool cellar, and in the course of a twelve-month it will be a fine drink. If good rectified whiskey be used, instead of brandy, it will answer very well.

A quart of honey, or molasses, and a quart of brandy, or other spirits, added to a barrel of cider, will improve the liquor very much, and will restore that which has become too flat and insipid. To prevent its becoming pricked, or to cure it when it is so, put a little pearl-ashes, or other mild alkali, into the cask. A lump of chalk broken in pieces, and thrown in, is also good. Salt of tartar, when the cider is about to be used, is also recommended.

To refine cider, and give it a fine amber color, the following method is much approved of. Take the whites of six eggs, with a handful of fine beach sand, washed clean; stir them well together, then boil a quart of molasses down to a candy, and cool it by pouring in cider; and put this, together with the eggs and sand, into a barrel of cider, and mix the whole well together. When thus managed, it will keep for many years. Molasses alone will also refine cider, and give it a higher color; but, to prevent the molasses making it prick, let an equal quantity of brandy be added to it. Skim milk, with some lime slaked in it, and mixed with it, or with the white of eggs with the shells broken in, is also good for clarifying all liquors, when well mixed with them. A piece of fresh bloody meat, put into the cask, will also refine the liquor, and serve for it to food on.

To prevent the fermentation of cider, let the cask be first strongly fumigated with burnt sulphur; then put in some of the cider, burn more sulphur in the cask, stop it tight, and shake the whole up together; fill the cask, bung it tight, and put it away in a cool cellar.

To bring on a fermentation, take three pints of yeast for a hoghead, add as much jalap as will lie on a sixpence, mix them with some of the cider, beat the mass up till it is frothy, then pour it into the cask, and stir it up well. Keep the vessel full, and the bung open, for the froth and foul stuff to work out. In about fifteen days the froth will be clean and white; then, to stop the fermentation, rack the cider off into a clean vessel, add two gallons of brandy, or well rectified whisky, to it, and bung it up. Let the cask be full, and keep the vent hole open for a day or two. By this process, cider that is poor, and ill tasted, may be wonderfully improved. Let it be refined by some of the methods before described.

To cure only cider, take one ounce of salt of tartar, and two and a half of sweet spirit of nitre, in a gallon of milk, for a hoghead. To cure rosy cider, take six pounds of powdered alum, and stir it into a hoghead; then rack it off and clarify it.

To color cider, take a quarter of a pound of sugar, burnt black, and dissolved in half a pint of hot water, for a hoghead; add a quarter of an ounce of alum, to set the color.

Cider brandy mixed with an equal quantity of honey, or clarified sugar, is much recommended by some for improving common cider; so that, when refined, it may be made as strong and as pleasant as the most of wines.

Cider has been made in Great Britain of such superior quality as to command a price of sixty guineas a hoghead. If such can be made there, it can also be made here, where our climate in general is more favorable for the production of apples of the best qualities.

Mr. Wynkoop, of Pennsylvania, says that the Virginia crab apple is the best for making cider within his knowledge.

We will also add his method of managing the cider from that apple.

He says that when, by placing the ear at the bung, a hissing noise is no longer heard, then the fermentation has ceased; and then the cider should be drawn off. If this be not done, the pomace at the bottom will, during a damp or warm state of the weather, rise up, which produces a second fermentation, of the acetous kind, which hurts the liquor.

When the cider is drawn off into other clean casks, an ebullition pervades the liquor; and while that continues the bung is laid loose in the hole, and the gimblet hole is kept open till the ebullition subsides. Then put in the bung tight, leaving the gimblet hole partly open a little longer, and then close that up.

He fines his cider after the ebullition, which takes place after the second racking, has sub-sided. At this time he draws off some gallons of cider into a small cask; to which he adds isinglass, pounded and unravelled into shreds, at the rate of two ounces for a hoghead; and the liquor thus drawn off, with the isinglass in it, is stirred up for three or four days, so that it becomes diluted to a thin jelly; when the whole is strained through a fine hair sieve, and put into a clean hoghead, which is filled with the rest of the cider from which a part was drawn, as before mentioned.

He racks off his cider six times: first, when the fermentation has ceased; second, when the ebullition has ceased; third, when drawn off to be put on the fining; fourth, when drawn off the lees of the fining; fifth, when the consequent ebullition has again ceased, and the cider has lain still six or eight days; when it is then drawn off into clean barrels, or bottles. He sells this cider for upwards of fourteen dollars a barrel.

MACHINE FOR SPINNING HEMP.—Mr. Joseph Westerman, of New York, says the New York Courier & Enquirer, has invented a machine, by which rope yarn is spun from hemp, without the process of hatchelling, and, in consequence, without the usual loss of eight or ten per cent. from that cause. The machine is simple, and its utility has been tested. It produces a yarn far superior in smoothness and strength to that produced by hand spinning; and the saving, it is said, would be fifty per cent.

A GOOD SIZED PEAR.—A Pear, which grew on a tree belonging to Mr. Richard K. Brickett, of Hampstead, N. H. measured thirteen inches and three quarters in circumference, and weighing one pound five and a half ounces. Quite a subject for a meal!

Prices Current in New York, September 28.

Beeswax, yellow, 15 a 20. **Cotton**, New Orleans, .16½ a 18½; Upland, .15 a .17; Alabama, .15 a .18. **Cotton Bagging**, Hemp, yd. .20 a .22; Flax, .18 a .19. **Flax**, American, 20 a 22. **Flaxseed**, 7 bush. clean, — a —; rough, — a —. **Flour**, N. York, bbl. 5.50 a —; Canal, 5.68 a 5.87; Balt. How'd st. 6.50 a —; Rh'd city mills, 6.75 a 7.00; country, 5.75 a 6.00; Alexandria, 6.00 a 6.25; Fredericksburg, 5.75 a —; Petersburg, 6.00 a 6.25; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per bhd. 16.50 a —. **Grain**, Wheat, North, 1.12 a 1.16; Vir. 1.16 a 1.20; Rye, North, .78 a .80; Corn, Yel. North, .76 a .78. **Barley**, .70 a .72; Oats, South and North, .35 a .40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 8.00 a 10.00; **Provisions**, Beef, mess, 10.75 a —; prime, 6.44 a 6.50; cargo, — a —; Pork, mess, bbl. 15.75 a 16.00, prime, 11.75 a 12.00; Lard, .9 a .154.

AGRICULTURAL IMPLEMENTS,**Seeds and Fruit Trees.**

SINCLAIR & MOORE, corner of Pratt and Light streets, offer for sale a general assortment of the most approved kind of **PLOUGHS** of various sizes and patterns—both with wrought and cast shears—also, extra shears and heels to supply the demand for old Ploughs.

CYLINDRICAL STRAW CUTTERS of the following sizes and prices, viz.—11 inch box, \$7—14 inch do. \$45—16 inch \$55—20 inch do. \$75—this last size is a very powerful machine, and is adapted to horse or water power, but may be used advantageously by hand. The smallest size of these boxes will cut 300 bushels per day, the 14 inch box will cut about 700 bushels per day—also, common straw cutters at \$5 to \$7 50.

CORN SHELLERS with vertical wheels, the most durable and efficient kind—**Lanes' Patent THRESHING MACHINE** and **HORSE POWERS**—Improved **WHEAT FANS**, Harrows, Shovels, Spades, Mattocks, Picks, Brier Hooks, Cast Steel Axes of superior quality, &c. &c. **Clover**, Timothy, Orchard Grass, Herds Grass, Tall Meadow Oat Grass, Lucerne and White Clover Seeds.

FRUIT TREES, a great variety—Catalogues to be had at our store.

N. B. The inconvenience and expense of collecting small accounts at a distance has induced us to adopt as a general rule of business, that all small bills must be settled in cash or town acceptances on delivery of the articles—a discount in prices will be allowed for cash, where the articles purchased are of sufficient amount to be an object.

Oct. 3.

MORUS MULTICAULIS,

(New Chinese Mulberry.)

Of this tree, unrivalled in its excellence for feeding silkworms—quick in its growth and hardy in its constitution; yielding far more nutriment for the worm in the same bulk than any other tree known, and making silk of a very superior quality—a full supply will be furnished at this establishment, at seventy-five cents each: seven trees (including packing) will be sent for \$5, and fifteen for \$10. The trees will be ready for delivery 1st of November.

I. I. HITCHCOCK,

American Farmer Establishment.

SEED GRAIN.

For sale—Seed rye, red bearded and blue stem wheat—also, white bearded, white stiff stem wheat; the above are all of prime quality and clean; the white stiff stem is valued for its fine quality, and yield, and also, for its standing much longer than other grain when ripe.

Oct. 3.

J. S. EASTMAN.

CAST IRON CIDER SCREWS AND APPLE NUTS,

For sale at WM. MILLER'S Iron Foundry, East side Jones' Falls, opposite the fish market; also, castings for flour mills, cotton factories, saw mills, and horse powers. All orders will be punctually attended to.

Oct. 3—11.

THE FULL BLOOD DURHAM SHORTHORN BULL HECTOR IS FOR SALE.

This bull was bred by Col. Powel. The beautiful imported bull Memnon was his sire, and Daphne his dam, both of which are recorded in the English Herd Book for 1829. Hector will be four years old in October next, has no bad habits, and is thought by a judicious breeder, who has seen the best of this stock in England and America, not surpassed by any he has seen. Col. Powel says, that in his late agricultural tour to England, he saw no stock superior to the ancestors of Hector. It is a sufficient recommendation of this bull, to state, that he does not in the least detract from the reputation of Col. Powel, as the most successful breeder of this stock in America.

The price of Hector is \$500 cash. Apply to Doctor H. Howard, Brookville, Maryland. Sept. 13.—41.

STRAWBERRY PLANTS.

The proper season for transplanting Strawberry Plants being at hand, I offer for sale, a great variety of kinds, among which are:

The **NEW PINE**, very large, productive and of fine flavor. It seems to be the best with which we are acquainted. Price \$2.00 per hundred.

EARLY SCARLET, **LATE BOURBON PINE**, and **LARGE EARLY SCARLET**, are the kinds with which our gardeners mostly supply our market. Price \$1.00 per hundred.

Roseberry, **Downtown**, **Grove End Scarlet**, **Bath Scarlet**, **Duke of Kent's Scarlet**, **Raspberry Hautbois**, **New Black Musk Hautbois**, **Wilmut Superb**, **Keene's Imperial**, **Keene's Large Scarlet**, 50 cts. per dozen.

MELON, **MELVEN CASTLE**, new and splendid varieties, \$1 per dozen.

The plants can be put up and sent to any part of the union. Orders should be sent immediately to

I. I. HITCHCOCK,

American Farmer Establishment.

MONTHLY BUSH ALPINE STRAWBERRIES.

A few plants of the monthly, or everbearing Alpine Strawberry, without runners, BOTH RED AND WHITE, may be had at the American Farmer Establishment.—Price \$1 per dozen. I. I. HITCHCOCK.

FINE CALVES.

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Shorthorn and half Alderney. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

HOLSTEIN CATTLE.

A bull and cow, each three years old, very handsome and the cow an excellent milker may be obtained by immediate application to the subscriber. Price of each, \$100.

Also, a bull calf of last spring, half Durham Shorthorn and half Holstein, a very superior animal. Price \$50.

The Holstein is a favorite breed of cattle at the celebrated Orange farm dairy near Baltimore, and they are held in equal esteem by Mr. Barney, whose dairy near Philadelphia is one of the best in the country and whose opportunities of judging are unsurpassed. Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

I. I. HITCHCOCK,

Amer. Farmer Establishment.

WANTED,

All kinds of **GRASS SEED**, for which a fair price will be given, by

I. I. HITCHCOCK,

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do ground leaf, 5.00 a 9.00.—**Crop**, common, 3.50 a 5.00; brown and red 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00.—**Line yellow**, 18.00 a 25.00.—**Virginia**, 4.00 a —. **Happhanoeck**, 3.00 a 4.00.—**Kentucky**, 3.50 a 8.00. The inspections of the week comprise 439 hds. Maryland; 10 hds. Ohio; and 10 hds. Ken.—total 459 hds.

Flour—best white wheat family, \$6.75 a 7.25; super Howard-street, 6.12½ a 6.25; city mills, 6.00 a —; city mills extra 6.25 a —; **CORN MEAL** bbl 3.62½; **GRAIN**, new red wheat 1.14 a 1.18; white do 1.20 a 1.30.—**CORN**, white, 63 a 64; yellow, 66 a 67;—**RYE**, 65 a 68.—**OATS**, 36 a 37.—**BEANS**, 75 a 80.—**PEAS**, 65 a 70.—**CLOVER-SEED** 6.00 a 6.50.—**TIMOTHY**, 3.00 a 3.50 **ORCHARD GRASS** 3.00 a —.—**Tall Meadow Oat Grass** 2.50 a —.—**Herd's** 1.25 a —.—**Lucerne** — a 37½ lb.—**BARLEY**—**FLAXSEED** 1.37½ a 1.50.—**COTTON** Va. 15 a 16; Lou. 17 a 19; Alab. 15 a 17; Tenn. 15 a 16; N. Car. — a —; Upland 16 a 17½.—**WHEAT**, hds. 1st 3.30 a —; in bbls. 32 a 33.—**Wool**, Washed, Prime or Saxony Fleece 60 a 70; American Full Blood, 52 a 58; three quarters do. 47 a 52; half do. 42 a 47; quarter do. 37 a 42; common 37 a 42. **Unwashed**, Prime or Saxony Fleece, 21 a 37; American Full Blood, 28 a 31; three quarters do. 25 a 28; half do. 24 a 25; quarter do. 24 a 25; common, 24 a 25; **Hemp**, Russ-13, Lou., \$170 a 182½. **Country**, dew-rotted, 6 a 7c. lb. water-rotted, 7 a 8c.—**Feathers**, 38 a 40;—**Plaster Paris**, per ton, 4.00 a 4.12½; ground, 1.50 a — bbl. **Iron**, gray pig for foundries per ton 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—**Prime Beef** on the hoof, 5.75 a 6.50.—**Oak wood**, 3.00 a 3.75; Hickory, 4.25 a 4.75; Pine, 2.37½.

Wool—We are of the opinion that the price of wool is as high now as it is likely to be this season, and that those farmers who have not sent their wool to market, would promote their own interest by sending it immediately.

HERD'S GRASS SEED—Is higher than has been usual, but we think is likely to maintain its present price. It has been too low for the interest of farmers.

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Editorial Address—Present of a Greyhound dog and slut of a valuable breed, from the President of the United States—On Mowing Wheat—Great Wheat Crop—Large Apple—Grapes for making Wine—Recipe for Pickling Cucumbers—to make a farmer—Ploughing in Clover for Wheat and Corn—Foreign Markets—Discovery of Marl and Gypsum in a new District of Virginia—On Extirpating Sassafras—Account of the Olive, its culture in this country recommended—On the Culture of Silk, and its application to this country—Agricultural School lately established at Bristol, Pennsylvania—On the best Method of Making, Firing, and Preserving Cider—Machine for Spinning Hemp—A good sized Pear—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL**Agricultural and Horticultural Establishment:****COMPRISING,**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the **AMERICAN FARMER**, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

§ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

§ **DIRECTION OF LETTERS.**—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, OCT. 11, 1833.

THE NEEDY AND THE NEEDFUL.

Dear patrons, that we're needy, need we say?
Pray send the needful—this needs no delay;
Our needs are such, that we must needs receive,
Then send the needful pray, and our great needs relieve.

RHODE ISLAND CLASSICAL, AGRICULTURAL, AND MECHANICAL SCHOOL.

We have received a paper containing the Reports of several Committees at the Patuxent Fair of "the Rhode Island Society for the Encouragement of Domestic Industry," and amongst them that of the Committee on the School above named, which was established the last year under the patronage of the Society. It has been in operation only five months, yet it numbers 92 scholars from several states. It is located upon an eminence, commanding an extensive and most delightful view of the surrounding country, and of Narragansett Bay.

The committee in their report observe, "it was equally obvious that Agriculture and the Mechanic arts, by a union with science, would acquire their greatest perfection, and that if with the *old*, it became so difficult to introduce improvements in agriculture, we might recommend them to the *young*, by blending them with literature, in the hours of recreation, and that a pattern farm thus conducted scientifically, would invite also the practical farmer to adopt what might thus be proved useful.

"In the hope of realizing some of their anticipations, and feeling the necessity of making a beginning, that we might not 'hope against hope,' the standing committee during the last year, appointed a committee to effectuate the objects of the petition presented to them, and appropriated the sum of one thousand dollars to that purpose.

"This committee immediately engaged one of the best classical teachers in the state, and made those other arrangements which they deemed necessary. The school has been in operation about five months, and has flourished far beyond the hopes of its best friends. Three hours each day, are devoted by the students under their instructors, to manual labor, this is to be required from all. In the summer, those who prefer agriculture must till the soil, whilst the others are mechanically employed; and in winter, by the erection of a work shop, which is now nearly completed and supplied with tools, all will then labor *mechanically*. Those students who pursue the classical with the English branches, pay \$7 50 a term; English scholars only, pay \$5 a term. These sums have been found sufficient to pay the salaries of the teachers, and the young gentlemen are to be allowed the profits of their labor.

"The society, however, want *more land* that their experiments in agriculture may be conducted on a large scale, and by appropriating a portion of their funds to this purpose, it is believed that the objects of this society might be accomplished better than in any other way.

"The school also may need *occasional aid* from the funds of this society, but the committee believe, that if the experiment is prosecuted with the success with which it has begun, that with the aid of a farm it will soon support itself, and be made the means of enabling the poor, eventually, to educate themselves in a great measure, from their own labor."

Fifty-seven dollars and seventy-five cents were awarded to the scholars of the school, for mechanical labor.

The crops raised on the society's lands, and which belong exclusively to the AGRICULTURAL SCHOLARS, are valued at one hundred and twenty dollars, which

taking into consideration the lateness of the season when the school and the farming operations commenced, (the latter being about the 25th May) the produce on less than four acres of land will be considered large.

This is certainly a very creditable beginning, and not only speaks well for the wisdom of the society, and the liberality of the public of Rhode Island, but goes far to prove the practicality of educating our young men, at once cheaply and *practically* in the most necessary and pleasant of human avocations. Amongst the "rules and regulations of the institution," is the following:

"No student shall on any pretence whatever, visit or be seen loitering about those places where ardent spirits are sold."

TO THE EDITORS of those papers for which we exchange the Farmer, and which are at a less price than ours, we beg leave to present our respects, and to ask as an equivalent for the "diffidence," the insertion in their respective papers of our "general advertisement" in this number, say two or three times immediately, and about once a month till March next.

CASTOR OIL FOR LAMPS.—In the thirteenth volume of the American Farmer, page two hundred and seven, we mentioned a discovery, by Mr. Isaac Smith, of Eastville, Northampton county, Va. which enabled him to render castor oil equal to the best sperm, for burning in lamps. We mentioned, also, that it was Mr. Smith's intention to take out a patent for his valuable improvement. This, however, he has never done; and his son, Mr. Francis H. Smith, of this city, called at our office a day or two ago, and gave us permission to make known, for the benefit of the public, his father's method of preparing the oil, which is merely mixing with it spirits of turpentine, with which it readily combines, in the proportion of one of the latter to four of the oil. The simplicity of this manner of preparing it, enhances the value of the commodity very considerably.

As to the excellence of the composition, for the purpose of lighting rooms, there can be but one opinion by all who have tried it.

It is at least equal to the best sperm we ever saw in its quality for combustion, and in its appearance decidedly superior. We are now writing by a lamp filled with it, and a finer light we never saw. The lamp has been burning three hours, and there is not the slightest appearance of crust on the wick, and on extinguishing the flame, there is no fire remaining in the wick as is generally the case with sperm oil, except of the very best quality—indeed, in the extinguishment and in the relighting of a lamp of this oil, there is a strong similarity to that of a gas light. Mr. F. H. Smith has used this mixture in his house these five years and prefers it decidedly to the best sperm. It emits, he says, a clearer and more powerful light, and burns somewhat longer than sperm and *never* congeals in the coldest weather. The present relative prices of castor and sperm oil, offer no inducement to those on the seaboard to substitute the former for the latter; but to our brethren of the west, the subject promises to be of much importance, as rendering them still further independent of foreign supplies for the necessities and comforts of life. The compound is likewise much cheaper to them, in as much as a double freight is saved—that on sperm oil from the seaboard and on castor oil, the abundant product of their fields, to a distant market.

MAMMOTH CALF.—A short time since, a Calf, raised by Mr. Thomas Jackson, of Robeson township, in this county, was slaughtered, when seven months old, and, when dressed, weighed two hundred and seventy-six pounds. If Jackson does not go the "whole hog," he can make "a pretty fair fist" at the *cubers*. Can Chester County "begin to try" at this?—*Chronicle of the Times*.

INTERNAL IMPROVEMENT—*applied externally*.—The New Yorkers who really understand their own interest—aye, and *act* upon their knowledge—have commenced in good earnest, the construction of a large steam packet, to ply between that port and Liverpool. She is to have four engines, and to be built in the most substantial and elegant manner. Success say we, for it is honorably earned by enterprise—not *word* enterprise, but *action, action, action*.

A meeting has been held in Harrisburg, Pa. to concert measures for the construction of a steamboat navigation from the Chesapeake Bay to the Lakes, through the Susquehanna river and the Seneca lake to Lake Erie, or Ontario. The project is worthy of the age and the country.—We, in Baltimore, besides our general interest as citizens in this matter, have, from our position a peculiar interest in all that concerns the navigation of the Susquehanna. It seems practicable, and deserves minute investigation.

Extract a letter from a subscriber in Fluvanna Co. Va. dated 25th Sept. 1833.

"The weather has been extremely warm for several days, have had no rain of consequence since 23d ultimo, until Saturday 21st inst. a light shower. The ground is excessively dry. But few farmers have sown any wheat. The crop of corn however, is thought to be an average one—wheat not more than half a crop—turnips are very unpromising indeed."

TO PRESERVE DAHLIA ROOTS.

A writer in the Horticultural Register states that he preserves dahlia roots through the winter by the following method:

"I choose a fine day to take up the roots, and expose them for a few hours to the sun, to dry the mold on them. I then clear away all the dirt I possibly can, wiping each root with a cloth, if necessary. When quite *clean*, I put them into a boarded closet and a kitchen. In a few days I scatter thinly all over them some very dry sand. They are then left, and only examined from time to time, to see that they do not get moldy, which, by the by, I never found happen."

A Little Wife and Cow wanted.—The following sublime poetic effusion is from the "Middlesex Gazette," printed at Middletown, Conn:—

I WOULD WISH,

If Heaven the grateful liberty would give,
That I might choose my method how to live;
Near some fair town I'd have a small retreat,
But uniformly, but not idly great:
A little garden just before the door,
And one behind more ample than before;
A little field, wherein a cow might stay;
A little wife, with temper kind and free;
Courteous to all, but most of all to me.
One that would choose but little for to roam,
Because a woman looks the best at home.
Business I'd have sufficient for to find
Employment for the body and the mind.
Open to all should be my purse and door,
No one more welcome than the old and poor.

GAMA GRASS.

By a letter just received from a gentleman of Greenville, Pitt County, we learn that the Gama grass has been found plentifully on Tar River, and that several planters of that neighbourhood intend to commence the cultivation of it. We also learn that it has been lately found in Lenoir. In answer to the inquiry which our correspondent makes, respecting the best time to transplant it, we can only say that we should consider October or February the best. We speak however, without experience.—*Newbury Spectator*.

AGRICULTURE.

(From Goodsell's Genesee Farmer.)

MANGEL WURTZEL.

This is the German appellation for the Field Beet, more commonly written a Margold Wurtzel or Mangel Wurtzel, and sometimes, though erroneously, called scarlet beet. It is believed to be a mongrel between the red and white beet, has a much larger root than either, and grows principally above ground.

Uses.—This succulent food is admirably adapted to the feeding of cattle, sheep, swine, &c. Neat cattle prefer mangel wurtzel to any other root that can be offered them; and its effects in producing large secretions of rich milk of fine flavor, are abundantly attested by American writers. Not only is the milk increased, but the quantity and quality of the cream, and consequently the product of butter. But milch cows, fed on mangel wurtzel, ought to have occasional changes of other food, as they are apt to become too fat for good milking. In the latter part of the season, many farmers are in the habit of pulling off the leaves, for feeding cows, sheep, &c. We would caution such against this practice until after the middle of October. It is a generally acknowledged fact, in vegetable physiology, that the leaves are the principal agents in the elaboration of the farina of vegetables, and whatever diminishes the power of developing the nutritive properties of this or any other plant, diminishes in the same ratio, its value in domestic economy.

Mangel wurtzel answers remarkably well for sheep during the lambing season, which usually happens when grass is not to be obtained; keeping them in a thriving condition, and affording a free flow of milk. Stall sheep fatten well on this alone, though it is better to allow them some hay, say at the rate of twenty-five lbs. of mangel wurtzel and five pounds of good hay per day to each sheep. In five or six weeks they will be ready for market; the probable gain will be from four to five pounds per week, in good sheep.

Swine fattened on this root yield firm pork, of fine flavor—it is fed raw, and much superior to corn or potatoes, in point of economy.

SOIL.—A clayey loam is the best, but any soil will suit, provided it is well pulverized and rich. Large crops have been raised on strong clay, but as this is apt to bake, it prevents the expansion of the roots—and should not, therefore, be chosen, when a soil which is not liable to this inconvenience can be obtained. As a general rule, good corn ground will grow mangel wurtzel.

MODE OF CULTURE.—Whatever be the soil, give it a good broad cast manuring in the fall, if practicable, and plough it in. In the spring, harrow it well, and throw it up in ridges three feet apart. By this manuring, more nutritive matter is afforded to the lateral fibres, which this root sends out in pursuit of food. On these ridges, draw a light furrow or drill, about two inches deep, and sow the seed from one to two inches apart in the drill. Sow plenty of seed—the young plants are easily thinned out in hoeing; but if deficient, are not so easily replenished, and the expense of a few more seeds, is nothing, compared to the insurance of a good crop. From three to four pounds is considered by Mr. Garbutt as the proper quantity for an acre. The after culture is easy, and consists principally in weeding, which may be performed with the hoe and plough, when necessary. The plants, when well started, must be thinned out to ten or twelve inches—this part of the business is most expeditiously performed with the hoe, when weeding, and wherever the crop fails in part, from any cause, the intervals may be advantageously filled up with Ruta Baga, which is in season for sowing, as late as the 25th of July.

Some prefer making trenches three feet distant, in the spring, by passing the plough up and down in the same furrow, filling the manure in this trench, and

covering it by passing the plough up and down the outside, thus making a ridge with the manure under it, and sowing on the ridges as above. Experience proves this method objectionable. If the season is dry, this trench of compact manure renders the ground above it still drier; and, as the manure lies in a body, though the tap root may reach it, yet the lateral fibres will receive no benefit from it whatever. But, by being thoroughly incorporated with the earth, by the fall ploughing and spring harrowing and ridging, the whole crop receives the full benefit of whatever nutrition it may contain. Others, again, contend that the ground ought to be made perfectly level and smooth before the seed is sown, as a safeguard against dry weather; but so far as my knowledge extends, crop, treated in this way, have not been so abundant as parallel crops on ridges, and they certainly require more than double the attendance. For, in hoeing, many of the young plants will be covered, and the operator must stop and carefully brush away the earth with his fingers. But, planted in ridges, all the earth and weeds loosened by the hoe, fall away from the plants into the furrows. These various methods of culture, with slight variations, have their advocates; but I believe the course recommended in the fore part of this paragraph, will be found the most economical and profitable.

TIME OF SOWING.—The proper time for sowing mangel wurtzel is the last week in April, or first in May. Though it is commonly sown later, experience proves that early sowing ensures a better yield; the vegetation is less precarious, and the roots are larger and more fully matured. Yet the time may be varied a little, either way, regard being had to the forwardness or lateness of the season. The seed does not sprout well if sown in a dry time; the husk being hard and firm, requires considerable moisture to cause the seed to start; but in long continued and heavy rains, it frequently rots in the ground. The seed requires no previous preparation.

PRODUCE.—The quantity produced on an acre varies from twenty-five to fifty tons. A fair average crop may, with safety, be set down at thirty-five tons, and the expense of culture at from twenty-five to thirty dollars—including manure, ploughing, weeding, gathering, seed, &c. In England, it is said that upwards of sixty tons have been raised on an acre.

COMPARATIVE QUALITIES.—Various comparative experiments have been instituted by American farmers, which have almost universally resulted in favor of mangel wurtzel, both for keeping and fattening stock, over ruta baga, carrots, and all other succulent food. It is not liable to the attack of insects; whereas, turnips, cabbages and other vegetables, are frequently entirely cut off; neither does it suffer much from the variety of seasons. It thrives in almost any soil, and will keep sound and firm eight or ten months. The flavor of milk and butter of cows fed on this plant is improved; but it is impaired when turnips are given. As a further proof of its nutritive effects, we would observe that Bonaparte passed a law that the whole farming community of Flanders should set apart a portion of their farms, for the cultivation of mangel wurtzel, to be employed in making sugar. The experiment proved, that good sugar could be produced, at one shilling per pound, when, at the same time, West India sugar was selling at five shillings in France.

For fattening swine, five bushels is believed to equal one of corn. Compared with hay, there are various estimates, varying from two to three tons, to one of hay. But whenever mangel wurtzel is given to stock of any kind, they ought to have an allowance of their accustomed food, either with it, or during the intervals of feeding.

OBJECTIONS.—There are some authorities who speak unfavorably of the use of mangel wurtzel, as food for milch cows. Henry Colman, of Salem, says that his cows, when fed from half a bushel to a bushel per day, were much reduced in flesh, though the quantity of milk was increased, and its quality improved. It is

asserted in the British Farmers' Magazine, that the roots ought not to be used before Christmas, and the cattle ought to be habituated to them by degrees—that it purges cattle and reduces them to a very thin state. Mr. Cooke's cows were materially injured by the free use of mangel wurtzel, and some of them died. In the same journal, the Rev. Henry Barry remarks, that he fed mangel wurtzel liberally to his cows; but he soon found them reduced to skeletons—the quantity of milk was increased, but it was both thin and poor.—The bad effects charged to this root are principally of foreign origin. In western New York, we have not heard any bad effects attributed to its use; and we make these quotations to put growers on the alert, that they may canvass the effects of this justly esteemed and invaluable food. If it is liable to these objections, let us look round for the preventive means.

The mode of preserving is precisely the same as for potatoes. They must always be put away dry—this is essential to their preservation. The covering ought to be sufficient to keep out the frost, but not very warm, as they are finest in the spring when kept rather cool. To contain those to be fed in the winter, a double pen or bin might be made in the barn-yard, or any convenient place, of boards, or rails and posts, the one within the other, and the interval filled with long manure. The roots put into this will keep well, if it is properly constructed and thatched with straw, and be of easy access through a convenient opening. It will be recollected that the leaves are to be pulled off immediately after the roots are taken out of the ground. They may be fed to cattle or sheep, and will be found quite an adjunct to the pasture field's.

The following letter from William Garbutt, Esq. President of the Monroe County Agricultural Society, to the Editor, will, we trust, be read with satisfaction. Mr. Garbutt is a practical farmer, and has had more experience in the cultivation of mangel wurtzel, than any other farmer in this neighborhood, which renders his observations more interesting.

Wheatland, July, 1833.

SIR:—The first number of your Genesee Farmer has come to hand, and I think you have made a good beginning.

Your remarks on the field beet are good, but I do not know how to account for the scouring and loss of flesh mentioned by the English authors, unless the ground had been very soft, so that much earth adhered to them when pulled. I conceive that cattle fed on them alone, when in such a situation, might be subject to such complaints, but I never had any thing of the kind happen to any of my stock.

I always commenced feeding my milch cows with mangel wurtzel as soon as the pastures begin to fail in autumn, which sometimes happens as soon as the middle of October.

I commence giving from half to three-fourths of a bushel to each milch cow, and twice that quantity, to one when fattening, is sufficient. To feed an animal entirely on field beets, would be like a person's living upon butter, and therefore feeding at the same time, some coarse fodder, is not only good economy, but absolutely necessary. The value of mangel wurtzel, to those engaged in raising stock, is very great; chaff and straw, when fed to stock with beets, are preferable to the best hay, when fed alone, and by such feed the cost of keeping stock is much reduced.

It will afford me much pleasure if I can communicate any thing to you on this subject, which will be the result of practice, and not of theory.

Yours, sincerely, WILLIAM GARBUTT.

A German Priest walking in procession at the head of his parishioners over uncultivated fields in order to procure a blessing on their future crops, when he came to those of an unpromising appearance, would pass on, saying, "here prayers and singing will avail nothing—this must have manure."

(From the New-York Farmer.)

QUANTITY OF INDIAN CORN TO THE ACRE.

*Meadowbanks, Deerfield, 2
Mass. Sept. 9, 1833. S*

MR. FLEET:

Your New-York Farmer for this month was received last evening, and I make no delay in replying to the inquiry of your correspondent E. The farmer to whom I referred, whose crops of corn for the last ten years, have averaged more than one hundred bushels to the acre, is Earl Stimpson, Esq. of Galway, Saratoga county, N. Y. On a visit to his extraordinary and admirable establishment, in July of the last year, where every agricultural operation seems to be conducted in the most skilful and systematic manner, he gave me this assurance, as I find noted in my journal at the time; and I beg leave to inform your correspondent, that to any gentleman of agricultural taste and science, a visit to this farm cannot fail to yield instruction and great pleasure.

Mr. Stimpson's success, however, in the cultivation of this valuable crop, is not singular. Examples of crops as abundant are on record in your correspondent's own state; and to these, and to some others, as extraordinary, it may be useful and gratifying to refer. I ask leave, therefore, to mention a few, which have been submitted to the most careful examination, and the results established by the fullest proof.

John Stevens, of Hoboken, N. J. produced on one acre, 118 bushels, 2 quarts. "Mr. S. was confident that he would have had considerably more corn, had not his crop suffered very greatly by a thunder storm, which laid the greater part of it down at the time the ears were setting." On this crop a bet of fifty guineas was pending. The motives to exact measurement were such, therefore, as to secure accuracy. This was some years since; the particular date I am not able to ascertain.

Dr. Steele, of Saratoga, in giving an attested account of the crops of Earl Stimpson, in 1821, says that he had eight acres of Indian corn, which yielded 112 bushels to the acre, 896 bushels; 10 do. do. 90 bushels to the acre, 900 bushels. (Memoirs of New York Agricultural Society, vol. 2, page 73.)

The following individuals applied to the Agricultural Society in Washington county, Penn. in October, 1823, for premiums, with authenticated evidence of the quantity raised per acre, on not less than five acres: Joseph Evans, 136 bushels per acre.—John Wolf, 127 1/2 do. do.—Samuel Anderson, 123 bshls. 12 quarts do.—Isaac Vanvooken, 120 do. do.—Isaac Buckingham, 118 bshls. 1 quart, do. do.—James Clakey, 113 do. do.—Jesse Cooper, 108 do. do.—De Gross Jennings, 120 do. do.

In the same year the following individuals applied to the Alleghany County Agricultural Society, for premiums on their crops: James Anderson, of Ross township, 103 bushels, 17 quarts, on one acre—John Snyder, of do. 103 per acre, on five acres—John Irwin, of do. 105 bshls. 20 quarts, per acre, on 43 acres—Wm. McClure, 129 bushels per acre, on five acres. (Memoirs of Pennsylvania Agricultural Society, vol. 6, page 238.)

In 1822, J. & M. Pratt, of Easton, Madison co. N. Y. obtained from one acre, 172 1/2 bushels—do. do. 161 do.—do. do. 161 do.

In 1821, the same gentlemen obtained from four acres 680 bushels, or 170 to the acre.

From public and private testimony I know that the respectability of these gentlemen is such as to justify entire confidence in their statements; and their crops were subjected to the particular examination of committees for a premium. The Messrs. Pratt, say they have no doubt of being able to obtain 200 bushels to an acre.

In 1823, Benj. Bartlett, of Easton, Madison co. N. Y. obtained from one acre 174 bushels. The veracity

of this gentleman is equally unquestioned; and his, too, was a premium crop.

In 1831, Benjamin Butler, of Oxford, Chenango co. N. Y. states that he raised on one acre, 130 bushels, at 60 lbs. per bushel, or 140 bushels at 56 lbs. per bushel. (New-England Farmer, for Nov. 1831.)

We will come now to some crops which have been produced in Massachusetts, on our cold, and rocky and despised soil. The evidence of these crops is ample and of undoubted character.

In 1820, J. Hunnewell, of Newton, produced 1114 bushels to an acre.

In 1823, J. Valentine, of Hopkinton, produced 116 bushels, 28 quarts, to an acre—D. Burnham, of Newbury, 117 bshls. 3 quarts, do.—T. & H. Little, of do. 116 do.—P. Williams, of Fitchburg, 116 bshls. 12 quarts, do.—W. Hull, of Newton, at the rate of 118 bushels, on seven-eighths of an acre.

In 1823, Fitch Winchester, of Southboro', 103 bushels per acre—John Lees, of Newbury, 113 bshls. 16 quarts, do.—T. & H. Little of do. 115 bushels do.—Thaddens Howard, of West Bridgewater, 122 bshls. 23 qts. do.

In 1824, — Wilmarth of Taunton, 112 bushels per acre.

1825, S. Longley, of Shirley, 112 bshls. 21 quarts per acre.

1827, John Andrew, of Danvers, 110 bushels per acre.

1831, Charles Bugbee, of Palmer, in Hampshire county, states that he has produced, on five acres, 510 bushels, or 102 bushels to the acre. (New-England Farmer, for Nov. 1831.)

I might produce many other examples of crops approximating a hundred bushels, and some as large as those which are above referred to. The above are fully attested by the examination of committees; and are, in most cases, certified under oath, with the exception of the last, which rests upon the personal declaration of the gentleman named, whose integrity I have no reason to distrust, though I have not the pleasure of knowing him, excepting through the communication above referred to.

Another gentleman, whose name has escaped me, residing in Windsor, Berkshire co. Mass. on the very ridge of the Green Mountain range, in a spot whose aspect was particularly propitious, produced a few years since, 240 bushels of corn on two acres, lying in one piece, for which he received the premium of the Berkshire Agricultural Society. This, however, I state from recollection only, and not from any documents in my possession. I have, likewise, the assurance of his neighbors, who profess to know the facts.

In the communication to which your correspondent refers, I there stated, that Jesse Buel, Esq. President of the N. Y. Agricultural Society, rated his corn crop, from the measurement of a part of it, at 103 bushels to the acre; and deemed it practicable to obtain 154 bushels to the acre. The above measurements are all understood to be of ripe and shelled corn.

I am perfectly aware that these are extraordinary statements; but I have not a doubt of their correctness. I have not, myself, been able, with the best cultivation that I could apply, though I have never had a very favorable opportunity, to obtain nearly one hundred bushels; though, in one case, I gathered eighty-six from an acre; but I do not, on that account the less doubt that it has been done. I know, likewise, very well, the utter incredulity of many persons on this subject, who say, "they never can, and never will believe it possible to obtain one hundred bushels of Indian corn from an acre of ground." In such cases, I ask them if they would make such statements under oath, if they were not true; and if they did make them, whether they would not expect to be believed, or feel that they ought to be believed; and then, if they are not willing to render equal justice to others, or if they regard themselves as the only honest people in the world?

I consider the crop of Indian corn as of the highest

importance to the country. There is, I believe, no farm, in which an acre of ground can be made to yield so much of food for animal life, as by the produce of Indian corn; and no crop by which, where the soil is well managed, so much is returned to the ground to repair the exhaustion, to which the crop has subjected it. Rye and oats are very inferior crops, compared with it. Wheat is much more precarious; and with good cultivation we may reasonably calculate upon two bushels of corn to one of wheat. The superior value of corn fodder, where it is well saved, is, in many cases, a full equivalent for the extra expense of cultivation.

The average amount of this crop, even on the rich alluvions of the Connecticut, is, I apprehend, not more than forty bushels to the acre; and throughout the state of Massachusetts, it does not exceed thirty. It is my opinion, that not one-fifth of the extent of land is devoted to this cultivation, which might be advantageously applied. Many a farm of one and two hundred acres, has, perhaps, a patch of Indian corn of from four to six acres. This is nothing, and scarcely deserves the name of farming.

The culture of this crop admits, certainly, of very important improvements. The great things which have been done, show us what may be done; and present the most emphatical encouragement to experiment and enterprise. I have seen fine crops of this vegetable growing in those parts of New-Jersey through which I have passed, and the soil seemed to me particularly favorable to its culture. Indian corn will bear to be cultivated longer in succession, on the same land, than almost any other crop; but its productiveness would be greatly favored by a judicious rotation. It is almost the only crop which cannot be too highly manured; and lands of a warm aspect, and which have a large proportion of siliceous sand, intermixed with loam, are peculiarly favorable to its growth. The durability of the grain is greatly in its favor; as, if well saved and housed, it may be kept in our climate for an indefinite period, without injury or deterioration; and the farmer may always regard it as having a cash value. When pork is worth six cents per pound, corn may fairly be considered as worth from seventy to seventy-five cents per bushel, provided the animals to be fattened are of a healthy and thrifty kind, and the corn is applied in the best form, and with proper economy. Its various important uses are too familiar to require remark. It is, in truth to be considered as the gold dust of a country, where it is capable of being abundantly produced. Yours respectfully,

HENRY COLMAN.

SIMPLE METHOD OF DESTROYING THE HESSIAN FLY.

As the wheat crop this season, has, in some places suffered considerable damage from the destructive effects of this insect, we are happy to be enabled, by a valuable and obliging correspondent, to publish the following directions for destroying it.

The Hessian Fly deposits its eggs on the wheat ear before it is reaped; the egg is so small as to be invisible to the naked eye, but may be very distinctly seen with a microscope; sometimes one grain of wheat will be observed to have several of these eggs on it. They are attached to the wheat by a glutinous substance deposited around them by the parent fly, by which they are held so firmly on the surface, as not to be easily removed by the motion of reaping, threshing, &c. Shortly after the seeds begin to germinate in the soil, the genial heat of the season brings the young fly from its egg in the form of a small maggot (as is the case with all insects), these little maggots deposit themselves at the root of the stalk, to the seed of which the egg has been attached, between the stem and the lowest blade or leaf, where they may be discovered during the month of May and beginning of June, quietly reposing; here they remain until the warmth of the season brings them to maturity, when they commence eating the substance to which they

have been attached. It is not until this period that those destructive effects are visible, by the wheat becoming withered and blighted. This accounts for the fact, that wheat which is attacked by this insect, presents a healthy appearance in the month of June, the month in which the embryo fly begins to use food.

Now it is evident that if the eggs of this fly can be destroyed on the seed wheat, by any process that will not also destroy the vegetative quality of the grain, the ruinous effects will be avoided. This can be done by the following very simple process:

"Soak the seed wheat in water for twelve hours; spread it out on the barn floor, so as to allow the superabundant water to escape, then take fresh slack lime and mix it among the wheat in quantity sufficient to have every grain covered with the lime, taking care to stir the wheat well with the shovel, so that no particle may escape coming in full contact with the lime, which, when thus applied, will in a short time destroy the eggs, and consequently preserve the grain from destruction."

Our correspondent assures us that the egg, which before the application of the lime appears clear and transparent, afterwards becomes opaque, and puts on the appearance of an added egg. The efficacy of the above remedy has been established by several experiments, one of which we will here relate. Wheat supposed to be infested by the Hessian Fly, was taken, and one-half of the quantity treated with lime, and the other half was sown in the same soil with the prepared, in alternate drills; the result was, that every stalk from the prepared seed came to maturity and was productive, whilst the alternate drills which had been sown with unprepared seed, were almost totally destroyed.

The above remedy for so serious an evil cannot be too widely circulated—we would recommend its translation into the French papers, and we would thank the Curés of the country parishioners, to have it made known at their respective church doors after divine service.—*Canadian Courant*.

(From the Northern Farmer.)
THE WHEAT INSECT.

Claremont, Sept. 7, 1833.

MESRS. EDITORS:—Having suffered considerably for two years past, from the ravages of this insect, half of my crops, at least, having been destroyed by them, I formed a resolution, that if it should be possible, I would gain some more information concerning them, than I had yet possessed. Accordingly, this season, I prepared a piece of ground near my dwelling house, and sowed it with wheat, that I might more conveniently make, at all times and seasons, the minute observations necessary to my design. I examined and watched, by *day light*, for the fly, which deposited the eggs of the wheat insect on the ears; but in vain. I could discover the eggs, but nothing of the insect, which deposited them. I concluded it must be a work of darkness; I therefore commenced a course of observations by candle-light. I now soon discovered the parent fly, the cause of all this mischief to the wheat crop; and had an opportunity to observe its habits and study its instincts.

Soon after dark, the flies commenced, in great numbers, crawling slowly up the stalks, from the ground, and ascended to the top of the ear, where they commenced depositing their eggs; where a single fly, in many instances, deposited sixty eggs at a time. At the approach of morning, the flies were again in motion, and descended slowly to the ground and disappeared. These flies are about the brightness of the common house-fly, but somewhat longer, and more slender, and of a green color. The ears of wheat, at this time, were only partially out of the sheath.

Another important fact, which may throw some further light on the habits of these insects, is, that their ravages are most destructive on the borders of the field. Though, in relation to small fields of wheat,

this may not be true, yet, from my own observation, as well as from information derived from others, I am satisfied it is the fact in relation to larger fields, so far, at least, as respects the present season. This being the fact, it goes far to show, that the embryo, from which the fly is produced, in the spring season, is preserved in the earth, through the winter, and not like the eggs of the Hessian fly, attached to the grains of wheat; that the worms remain in the soil of the wheat-fields of the last year, through the winter; and as soon as hatched, the flies proceed to search for the fields of wheat, as the place for depositing their eggs; and unless the field be small, or the flies exceedingly numerous, they confine their operations, in a measure, to the borders of the field. I am satisfied that the eggs of this insect are not deposited on the grains of wheat, otherwise, the manner of preparing my seed for sowing must have destroyed them. I have, to prevent the ravages of the Hessian fly, for the last thirteen years, prepared my seed wheat, by washing it thoroughly, and while in a wet state, pouring over it boiling hot ley, of wood ashes, sufficient to cover it, (no matter how strong the ley is) and drawing it off immediately. The ley will color the wheat, but will not injure the germ, or prevent it from growing. By this process, the eggs of the Hessian fly are destroyed, which are attached to the wheat; and by long experience, I am satisfied it affords a complete remedy against the ravages of that insect. I have often sowed wheat prepared in this way, in the same field, by the side of the same kind of wheat, without any preparation. The former has uniformly escaped the ravages of that insect, while the latter has been materially injured, and in some cases, entirely destroyed. I therefore consider the Hessian fly a much less formidable invader of the wheat crop, than I have formerly; but I have yet found no remedy against the ravages of the insect in question. I has been said, that the sowing of new slaked lime over the wheat, when the dew is on, during the time the fly is depositing its eggs, will put a stop to its operations. But how this may be, I cannot say, not having tried it myself.

N. E. In preparing the wheat for sowing, as mentioned above, my practice is, to prepare but one bushel at a time, lest, by remaining too long in the ley, the germ should be destroyed. As soon as the ley is drawn off, I mix with the wheat as much plaster, lime or ashes, as, when stirred well into it, will prevent the grains of wheat from adhering together, and sow it immediately.

DAVID HURD.

(From the London Horticultural Register.)

NEW WAY TO GROW EARLY POTATOES.

On walking out the other afternoon, in company with some friends, we were caught in a thunder-storm, and obliged to take shelter in a farm house, the owner of which which was known to one of the party. During the storm, the conversation turned upon gardening, and our host gave us a plan for raising new potatoes, which I send you. It may appear strange, but, as he says, he has tried it, and found it to answer very well. At all events, I think it worthy of consideration and a trial. I will give his own words, so far as my recollection serves.

"I was getting up my potatoes one year, in that field below the house, when the thought struck me, that by planting the smallest of them again, immediately, they would grow, and I should have new potatoes very early. I resolved to try the scheme. I had no hothouse or greenhouse, and was therefore

*An intelligent farmer in this town informed us, that his field of wheat, of six or seven acres in extent, was attacked by this insect on one of its borders only, and that, next to a piece of ground where wheat grew the last year, and which had been ravaged by the same insect.—*Editor*.

†This mode of preparing the seed has also been found to be an effectual remedy against smut.—*Do*.

obliged to hit on a plan for keeping off the frost, which I did as follows. I chose a part of the field in which I was working, and made trenches along the top and the sides to keep it dry, I then covered it a few inches deep with litter, put on a few inches of soil, and planted the potatoes, covering them again with soil. In order to keep the earth from falling down and smothering them, when they began to shoot, I stuck sticks and brushwood over the last layer of soil, and put on a quantity of litter, covering the whole with soil. One of my neighbors who saw me, was surprised, and said he was sure I should have nothing in the end, but I told him to come again on new year's day, and we would see. He did so, and we opened the bed and found new potatoes about the size of a marble. I then told him I would leave it until the 6th of March. I did so, and on opening it again, the new potatoes were as large as an egg, exceedingly well tasted, and quite mealy. I showed some to the gardeners in the neighborhood, who would scarcely believe me, when I told them how I had grown them."

The situation in which they were grown, and which I may have said, was on the north side of a hill, in the northern part of Lancaster, not the warmest situation in the world, as you may imagine.

The idea of growing potatoes in the manner above stated is good, but my informant's mode is, I think, capable of improvement. If, instead of the side of a field, an old hoed were used, and hoops placed so as to prevent the soil from falling down, and pressing on the young shoots, which would not grow very high, as potatoes when deprived of light do not grow so much above ground as they do naturally. I think early potatoes might be raised without any expense. I intend to try it at all events, and hope some of your readers will do so likewise.

MAN UNLESS S.

HORTICULTURE.

HORTICULTURAL SOCIETIES.

As the northern papers are teeming with accounts of the Exhibitions and Floral Festivals of the various Horticultural Societies, it may not be amiss to present our readers with a general view of these interesting celebrations. We have endeavored therefore, to select from the notices in the N. York and New Eng. and "Farmers," the most interesting matters and embody them in one article, thus collating the proceedings of the different associations in their respective sections of the country. It cannot fail to be interesting and gratifying to every friend of improvement, to witness the rapid strides with which our northern and eastern brethren are advancing in Agricultural and Horticultural science; at the same time we indulge a hope that their example may act as a spur to ourselves and our southern friends, admonishing us to "do likewise," and press forward manfully lest we be wholly distanced.

All of the exhibitions to which we allude, took place during the past month and it is a subject of great regret to us, that though we were travelling northward about the time, our arrangements would not permit us to be present at any of them. Perhaps after all, it was a very providential dispensation, for from the very glowing descriptions of the fruits exhibited, we do not think that we should have been led grievously into temptation. We believe our readers will agree with us when they read the extracts which we intend presently to give, were it for no other purpose than to make their mouths water as ours did when we first read them. We are always particularly desirous that they should feel what we write for their edification.

The 5th anniversary of the Newburgh Horticultural Society, was held on the 12th of September, and the display appears to have been highly creditable to the society. We extract from the Newburgh Gazette, the following account of one of the decorations of the Hall:

*The 6th of March is, I think, a great fair in the neighborhood.

"The room was decorated with great taste by festoons of evergreens and flowers intermingled, wreathed by the hands of some of our young ladies; and around the sides a profusion of greenhouse plants were arranged. On the tables the fruit was laid out to much effect, interspersed with magnificent bouquets of flowers, but its most conspicuous ornament was the superb decoration, for which the Society are indebted to the taste and ingenuity of our young friend, Mr. Jackson Downing. Nothing could be more exquisitely designed or neatly finished. The form was that of a circle of pillars supporting a dome, the whole composed of the leaves of the Thuja (arbo vitae) intermingled with every variety of flowers, the summit of the dome being overlaid with the richest double dahlias. The floor of this fairy temple, aptly denominated that of Flora, was also laid with a mosaic of flowers, and minute specimens of the smaller fruits, such as currants, strawberries, raspberries, &c. &c."

An address, which is very highly spoken of, was delivered by E. Armstrong, Esq. Among the premiums, we remark the following:—For best peaches, lemon clingstones, E. Armstrong, Esq; for some fine new seedling peaches of excellent quality, Rev. J. Brown; best pears, C. Ludlow; best and largest plums, Messrs. Downing; best foreign grapes, Mr. L'Honnemedun; best native do, Isabella, B. F. Buckingham; best and handsomest bouquet, Mrs. W. C. Hasbrouck; best two do, Miss Verplanck; greatest variety of annual flowers, Miss Verplanck—(we are always pleased to see the ladies beating away the prizes.) Mr. J. Downing, (we had almost written, Major Jack,) received a premium for his superb decoration.

The 4th celebration of Albany Society, took place two days after the preceding. The collection of fruit particularly is described as being very rich. We give a paragraph or two from the list, as a sample.

"From the garden of Isaac Denniston.—Half bushel Pears, two varieties, viz: Sekel and Rousselet De Rheims, or Spice Pear. Half peck Plums, five varieties, viz: Chancellor Gage, Red Gage, Bunker Gage, Royal Blue, and a very fine seedling Plum. Two doz. clusters Grapes, viz: Sweet water and Frontignac.

"From the garden of D. B. Slingerland.—12 peck Peaches, six varieties, viz: Giffard, Chancellor, Malacaton, Teton De Venns, Old Mixon and Lemon Cling, and a number of different varieties of Seedling Peaches. 12 peck Pears, four varieties, viz: Broca Bergamot, Summer Bergamot, Vergalien and Bon Chretien. Half bushel Apples, five varieties, viz: Sampson Apples, Fall Pippin, Craam, Surprise and Lady apple. Five varieties Grapes, viz: Winne, Burgundy, Sweet Water, Golden and White Chasselas. Three varieties seedling plums.

"From the garden of Aaron Thorp.—1 dozen superior Muskmelons, four varieties, viz: Nutmeg, Citron, Persian and Pine Apple. 2 very fine and large Watermelons. 2 large Citrons, and a very fine specimen of vegetables, Celery, &c. &c.

"From the garden of T. W. Ford.—1 peck Pears, three varieties, viz: Vergalien, Orange Bergamot and St. Germain. 2 or 3 quarts yellow seedling gage plums.

"From Gen. R. Westerlo.—A basket of fine seedling plums.

"From the Albany Nursery of Messrs. Buel and Wilson.—250 varieties of splendid double dahlias. A large basket full of different kinds of flowers. Half dozen melons, and a specimen of the India rare-ripe apples.

"Presented by Leveret Cruttenden.—A glass vase, with a number of beautiful white Cocoons, the products of his silk-worms; also, a specimen of the white China Mulberry leaf.

"From the garden of Jeremiah Smith.—A number of fine large yellow egg plums.

"From the garden of Col. J. K. Paige.—A large variety of vegetables.

"From the garden of Gen. S. Van Rensselaer, jun. Rare and fine vegetables, consisting of ten different kinds, some of them new and choice varieties.

"From the garden of Theophilus Russell.—1 doz. heads of very fine and large celery.

"From William Prince & Sons, Flushing, Long Island.—Twenty varieties very splendid double dahlias, labelled with their different names. 2 superior Williams' Bon Chretien pears, of large size and fine flavored. 1 cluster, weighing 24 oz. Syrian white grape, a new variety, and of exceeding fine flavor.

"At 2 o'clock, P. M. the annual address was delivered by the Rev. Dr. Wilson.

"At 3 a party of gentlemen sat down to a dinner prepared by Mr. Bradstreet, in the excellent manner and style for which his house is celebrated. Among the guests were the Governor, the Recorder of the city, and other persons of distinction. We cannot omit to notice the large and well formed bouquets of flowers from the Albany Nursery, and particularly the pyramid of dahlias from six to eight feet in height, and upwards of three feet in circumference at the base, comprising 250 varieties of the double dahlia and other flowers, and forming altogether a most splendid combination, very imposing and beautiful in appearance. It was designed and arranged by Judge Buel, exclusively of the flowers from the Albany Nursery. Jesse Buel, Esq., President of the Society, presided, assisted by Isaac Denniston, Esq., Vice-President, and by D. B. Slingerland, P. V. Shankland, and A. Gallup, Esqs., Committee of Arrangements."

We select two or three of the toasts drank on the occasion.

By Isaac Denniston, Esq. *Horticultural Societies*—A free interchange of information and knowledge of improvements in the arts among the various societies, the most effectual mode of attaining their important object.

By D. B. Slingerland, Esq. *Agriculture, Horticulture and Floriculture*—The most useful, rational, and delightful employment of the human family.

By A. Gallup, Esq. *Agriculture, Horticulture, and Mental culture*—May the two former never languish for want of the latter.

The successful competitors for premiums, were, S. Van Rensselaer, jun. and John K. Paige, for vegetables; D. B. Slingerland, and I. Denniston for fruits; Buel and Wilson, and John Whalen, for best collection of flowers; and discretionary and honorary premiums were awarded to Theophilus Russell, T. W. Ford, Aaron Thorp, R. Westerlo, J. Smith, L. Cruttenden and Wm. Prince & Sons.

The Pennsylvania Horticultural Society, has not been behind hand. We make room for some extracts from the account of their 5th annual celebration given by the Philadelphia Inquirer.

"The exhibition of the Pennsylvania Horticultural Society, at the Masonic Hall, was superior to any thing of the kind we ever witnessed. The rooms were crowded yesterday from the moment they were opened, until late in the evening, and but one opinion prevailed. All were delighted and gratified, all commended the taste and skill of the Committee of Arrangement. We heard several foreigners observe that they never witnessed any thing superior at home; and one Parisian, who was remarkable for the enthusiasm of his admiration, stated, that although he had witnessed several exhibitions of the same nature in Paris, they were far inferior to that before him. It is impossible to enter into details. The Fruit Table, which indeed presented a rich and sumptuous collection, attracted most attention. It was almost impossible to prevent some of the children who accompanied their parents, from an attempt to indulge their excited appetites. Indeed, some of the older spectators confessed that they never felt a stronger desire to possess that which did not belong to them. The taste must indeed be inactive and torpid, that is not excited by the contemplation of such a picture. The peaches of

Mr. Hatch, for example, would have raised another eye—while the pears of half a dozen contributors could not have but made every mouth water.

"We will mention some of the Fruit, Plants, Vegetables, &c. that attracted the greatest admiration.

"Peaches.—Large and delicious free stones, presented by Mr. Bates, of Camden, N. J.

"Rodman's Cling, by Joseph L. Hatch, of Camden, N. J. There could not be more delicious fruit.

"Lemon Clings, by the same gentleman.

"Seckel Pears, not quite ripe, but admirable specimens, from the original tree in Schuylkill, Point Meadows. Presented by G. Bastain, Esq.

"Seckel Pears, by S. Gratz, Esq.; J. D'Arras, Esq.; Benjamin Lehman, Germantown; John Heisler, near Burlington; Adam Price, Germantown.

"Pound pears, W. Lehman, Germantown.

"Butter pears, Alexander Parker and others.

"All of the above being large of size, rich and delicious of flavor, as we are assured by those who have tasted them.

"The collection of Grapes was abundant and creditable. We may mention, as especially deserving of notice, the white winter Malaga grape, from the garden of Pearsall Serrill, Esq.; the Powel grape, from the garden of Joseph Head, Esq.; the Clavier grape; offered by J. Haydock, Esq.; the Isabella grape, from the garden of T. Stewardson, Esq.; the Bland grape, by B. Duplain; the Catawba grape, by D. E. Ogden of Swedesboro, N. J., &c.

"Some splendid Spanish melons, by J. L. Hatch, Esquire, were worthy of note.

"The figs of Mr. Joshua Longstreth were large, rich and juicy—creditable in all respects. We observed one or two of the ladies present bending a thievish eye upon them, but, as they held their hands behind them, no harm was done.

"We have not space to allude properly to the splendid collection of plants. The Messrs. Landreths have contributed many of the most valuable and beautiful. The names of Messrs. Robert Carr, Alexander Parker, J. B. Smith, J. M'Arran, J. Longstreth, G. Pepper, A. D'Arras, M. Pierpont, and Robert Buist, should be mentioned as among the most valuable contributors to this department of the exhibition. The latter gentleman had a valuable and novel collection of New Holland plants, while the beautiful dahlias of Mr. Carr excited the warm admiration of the ladies in particular. The variety was indeed extensive.

"The Vegetable world of the Exhibition was perhaps the most remarkable part of it. Cabbage heads are common to this and every other country, but we confess we never saw such monsters of the species as were to be seen at the Masonic Hall, sent there from the garden of George Fisher & Son, Ridge Road.—The same gentlemen contributed samples of beets, tomatoes, &c. of their own culture, that "beat all nature."

"To conclude, we look upon the exhibition as one of the most creditable ever offered to the Philadelphia public, and while it shows the high state of perfection to which our Agriculturists, Horticulturists, &c. have arrived, it affords a most delightful entertainment to our citizens."

But we must not overstep our limits, in our next we will continue this subject—for we are convinced that the best means of increasing our own stock of information is to make ourselves well acquainted with the proceedings of the neighboring associations. We agree with the author of the Albany toast, that "a free interchange of information and knowledge of improvement in the arts among the various societies, is the most effectual mode of attaining their important object."

OUT OF SEASON.—We last week noticed an apple tree in the upper part of this village, which had growing on its branches, blossoms in full bloom and ripe fruit. This is the third time the tree has put forth blossoms this season—*Belvidere Apollo*.

(From the London Horticultural Register.)

NOTES ON THE IMPORTANCE OF DISPERSING THE VARIOUS VALUABLE PRODUCTIONS OF THE EARTH.

Observing that you have given in your valuable Register the best method of conveying plants and seeds* across the ocean, I send you a few notices to shew the importance of spreading the numerous valuable productions of the earth throughout the various colonies of England, and also how easily any individual may assist in conferring the greatest benefits on mankind, if he have facilities for planting or dispersing such things among his friends or neighbors.

In 1493, Columbus ordered those whom he left behind him at Fangori, to search for gold mines, and to sow European seeds.

In 1493, Columbus took a cargo of domestic animals, seeds, vine-cuttings, and sugar-canes on board, and discovered Dominica.

1494. The king of Spain ordered Columbus to prepare a farm, to lend the laborers fifty bushels of wheat and other corn from the government stores for seed, with twenty couples of cows, mares and other beasts of burden. Gardeners and husbandmen were sent out, and the settlers were also ordered to build houses and plant vineyards and gardens.

1494. Columbus founded the town Isabella. Several sorts of seed were sown, which grew rapidly and luxuriantly. On the shore of the river they made orchards and gardens, in which all kinds of the larger herbs, such as radish, lettuce, coleworts, borage, &c. became ripe within sixteen days after the seed was sown. They have likewise melons, gourds, cucumbers, and other like matters; as also the roots of canes or reeds, of the liquor whereof sugar is made, but the liquor is not yet hardened. The like they affirm of plants of vines, saying that they have the second year gathered ripe and sweet grapes, but by reason of too much rankness they bear but few clusters. All kinds of pulse, as beans, peas, fitches, tares, and other such, are ripe twice a year.

1503. Orando found out the chasing of the wild boar in St. Domingo. There were none when the island was first discovered, but the domestic animals brought by the Spaniards had run wild and multiplied exceedingly. The governor gave orders for cultivating mulberry trees.

1516. The plantain tree was carried from the Canaries to Hispaniola, by a Dominican.

1518. The sugar cane from the Canaries, which had been brought by a person named Aquilon, in 1506, had increased so much that a mill was erected in St. Domingo by a native of Vertunga.

1518. Bernal Diaz, having brought some orange seeds with him from Cuba, planted them near one of the places of worship in which he had sought shelter from the Mosquitoes. They grew and flourished and bore fine oranges, and were the first ever seen in New Spain.

1519. In Jamaica, some of the Spanish inhabitants had planted vines, and made several casks of good claret.

1526. The king of Spain ordered, that whenever any thing remarkable was found they should buy it for him.

1538. Horses were bred with much care in Cuba; the breed was famous for strength, shape and color. Many persons had twenty, thirty, or even seventy horses in their stables.

1565. At Curacao, there were 100,000 cattle, all bred from a dozen of each sort in twenty-five years.

1616. A ship from the West India islands, arrived at Bermudas with figs, pines, sugar canes, plantains, papaws, and other plants, which were immediately cultivated with success. The *Edwin* was sent from Bermudas by governor Tucker, for the purpose, in pursuance of orders from England.

* In a future number we will give our readers an account of the method of conveyance here spoken of.

1647. Tamarind trees were first planted about this time at Barbadoes, also the palm tree; the latter being from the East Indies.

1666. The cocoa tree was planted at Port au Paix, and Port Mangot, and soon spread over the island by Mr. Ogeron.

1710. Coffee was first brought to St. Domingo.

1744. Seeds of Guinea grass were brought from Guinea to Jamaica, to feed some birds presented to Mr. Ellis. The birds died, the seeds were thrown out, where they casually grew, and the eagerness of cattle to eat the grass, suggested the idea of cultivating it. A vast advantage has been derived from its thriving in the most rocky places, which otherwise would be of no value.

1757. The seeds of the Barbadoes cabbage tree were first brought to Jamaica, by governor Knowles.

1772. Plants of true cinnamon, logwood, turmeric, East India mango, Tobago nutmeg, sesamum, cassia, anatto, China tallow tree, vanilla, &c. were in the St. Vincent garden.

1782. Lord Rodney took a French ship, from the Isle of France to St. Domingo, with a large collection of oriental exotics, and a few plants of the real cinnamon.

1783. Cochin-China rice, and the tallow tree, were first raised in Martinique. They were also sent to Paris from Canton, by M. Lamy.

1789. The Baron de Wimpiern carried out the first seeds of narcissus, hyacinth, and violet ever known in St. Domingo.

1790. The plants taken to Jamaica by the Earl of Effery have succeeded beyond expectation, Gazze-rat wheat, barley, Ashmood rice, pulse, &c. as also a species of mangosteen.

1793. Admiral Blyth brought the bread fruit tree to the West Indies.

June, 1799. Mr. L. Millington sent some East India seeds to be distributed in Barbadoes, and a plant of the teak tree was preserved.

1809. The spice plantation of La Gabrielle is specially protected by an article of the capitulation of Cayenne.

Rice was carried to Carolina in the following manner:—Thos. Smith, the governor in 1683, had been at Madagascar, the country of rice, when a ship from that country with slaves was driven in distress. Mr. Smith expressed a wish to try some rice in his garden, the cook gave him a small bag, he sowed it in a place now called "Longitude Lane," the crop was distributed, and from this small beginning did the staple article of Carolina take its origin.

The history of indigo in America is also very curious. At one time it was the second staple produce of Carolina. Mrs. Punkney received some indigo seeds for her garden from her father, the governor of Antigua. She planted them in March, 1742, the indigo was cut down by the frost, she planted again in April, and it was lost again. She tried again and having succeeded, she distributed the seed. Hence the culture became common, and in a few years it was an article of export.—*Pitkin's Stat. Amer.*

(From London's Magazine.)

THE VILLA OF FROMONT,

ON THE SEINE.

M. Soulange Bodin combines, at Fromont, an elegant villa residence with an exotic nursery, and an institution for young horticulturists. M. Soulange Bodin, like M. Vilmorin, is at once a skillful cultivator, a marshall-greener, (seedsman,) a scholar, and an accomplished gentleman. As connected with the army, he has been all over Europe; and having been long (to use the Prince de Ligne's phrase) under the influence of the *jardinomanie*, wherever he went the gardens were the main object of his attention. At one time he had the principal management of the gardens of the Empress Josephine.

at Malmaison. On M. Bodin's retirement to Fromont, in 1814, he commenced laying it out in the English manner, and so as to combine the picturesque scenery of the park with the profitable culture of the nursery. The grounds exceed a hundred acres, of a surface gently varied, and sloping to the Seine. They are surrounded by a walk or drive, which displays varied views of the interior, the main feature of which is the chateau, and of the Seine, with some rising grounds beyond the boundary. In various spaces among the groups of trees are formed beds of peat earth, in which seedlings of American shrubs are raised; the more rare kinds being propagated by artificial methods. In the walled garden, near the house, are numerous pits and frames, in which the more popular exotics,—such as the orange, camellia, azalea indica, and numerous other greenhouse and hothouse plants,—are increased by hundreds. In effecting this, one of the principal modes employed is herbaceous grafting, or grafting on the young wood. The plants thus raised are sent to all countries. In the larger greenhouses and hothouses there is a collection of fine specimens, intended principally for ornament. The object of the institution, for the instruction of young gardeners, is to supply French country gentlemen with young men well acquainted with both the practice and the theory of their art, in all its branches. For this purpose there are professors, a library, a museum of implements and models, and a monthly journal, entitled *Annales Horticoles de Fromont*.—There is not a more striking example, in all France, of the gentleman and the man of science being united with the tradesman, than in M. Soulange Bodin; nor a villa in which more industry and activity go hand in hand with picturesque beauty. There is nothing of the kind that we know of in England; nor can there be in the present state of things. It is perhaps one of the finest moral features in France, that most gentlemen are either manufacturers, tradesmen or farmers; and that nearly all of the persons practising these professions are, in education and manners, gentlemen.

TO PREPARE VEGETABLE MOLD QUICKLY.

As early in Nov. as the leaves of trees can be collected, let them be brought in a considerable quantity, into a close place, and dressed up there in the form of a hot-bed. Let this be well saturated with the drainings from the dung heap, with suds from the wash house, and with urine from the stable and cow-house, where this latter article can be procured. Let this bed or heap be covered and lined with fresh stable dung, to make it heat. When the heat is sufficiently subsided, let the leaves be uncovered and turned over, to mix the dry and wet well together, and if moisture be required, let them have it of the same description, repeating the process till all be reduced to fine mold. This will be ready for use in two months from the time of collecting the leaves, and to prevent any waste of the liquid recommended, a layer of maiden earth, of two feet thick, should be made the substratum, which would receive any of the valuable liquid that would otherwise run to waste. Leaves of slow decomposition should be avoided, as those of the oak, &c. which, however, are the best for retaining heat in hotheds and pits. The leaves of Fir should also be avoided, but those of the Sycamore, Elm, Alder, Maple, &c. and all the soft kinds are best suited for the purpose. This compost should be kept dry, in an airy place, and ridged up, so that the rain cannot wash out the salts with which it abounds.—*Doyle's Practical Gardening.*

Tortoise shell and horn combs last much longer for having oil rubbed into them once in a while.

A large stone, put in the middle of a barrel of meal, is a good thing to keep it cool.

Lamps will have a less disagreeable smell, if you dip your wick-yarn in strong hot vinegar and dry it.

MISCELLANEOUS.

CRABS.

From the "Rambles of a Naturalist."

After the sun fish, as regular annual visitants of the small rivers and creeks containing salt or brackish water, came the Crabs in vast abundance, though for a very different purpose. These singularly constructed and interesting beings furnished me with another excellent subject for observation; and, during the period of their visitation, my skill was in daily requisition. Floating along with an almost imperceptible motion, a person looking from the shore might have supposed her entirely adrift; for as I was stretched at full length across the seats, in order to bring my sight as close to the water as possible without inconvenience, no one would have observed my presence from a little distance. The crabs belong to a very extensive tribe of beings, which carry their skeletons on the outside of their bodies, instead of within; and of necessity the fleshy, muscular, or moving power of the body, is placed in a situation the reverse of what occurs in animals of a higher order, which have internal skeletons, or solid frames, to their systems. This peculiarity of the crustaceous animals and various other beings is attended with one apparent inconvenience: when they have grown large enough to fill their shell or skeleton completely, they cannot grow farther, because the skeleton being external, is incapable of enlargement. To obviate this difficulty, the Author of nature has endowed them with the power of casting off the entire shell, increasing in size, and forming another equally hard and perfect, for several seasons successively, until the greatest or maximum size is attained, when the change or sloughing ceases to be necessary, though it is not always discontinued on that account. To undergo this change with greater ease and security, the crabs seek retired and peaceful waters, such as the beautiful creek I have been speaking of, [Curtis' creek, near Baltimore,] whose clear, sandy shores are rarely disturbed by waves causing more than a pleasing murmur, and where the number of enemies must be far less in proportion than in the boisterous waters of the Chesapeake, their great place of concourse. From the first day of their arrival, the latter part of June, until the time of their departure, which in this creek occurred towards the first of August, it was astonishing to witness the vast multitude which flocked towards the head of the stream.

It is not until they have been for some time in the creek, that the moult or sloughing generally commences. They may be then observed gradually coming closer in shore, to where the sand is fine, fairly exposed to the sun, and a short distance farther out than the lowest water mark, as they must always have at least a depth of three or four inches water upon them.

The individual having selected his place, becomes perfectly quiescent, and no change is observed during some hours but a sort of swelling along the edges of the great upper shell at its back part. After a time, this posterior edge of the shell becomes fairly disengaged, like the lid of a chest, and now the more difficult work of withdrawing the great claws from their cases, which every one recollects to be vastly larger at their extremities and between the joints than the joints themselves. A still greater apparent difficulty presents in the shedding of the sort of tendon which is placed within the muscles. Nevertheless, the Author of nature has adapted them to the accomplishment of all this. The disproportionate sized claws undergo a peculiar softening, which enables the crab, by a very steadily continued, scarcely perceptible effort, to pull them out of their shells, and the business is completed by the separation of the complex parts about the mouth and eyes. The crab now slips out from the slough, settling near it on the sand. It is now covered by a soft flexible skin; and though possessing precisely the same form as before, seems incapable of the slightest exertion. Notwithstanding that

such is its condition, while you are gazing on this helpless creature, it is sinking in the fine loose sand, and in a short time is covered up sufficiently to escape the observation of careless or inexperienced observers.—Neither can one say how this is effected, although it occurs under their immediate observation; the motions employed to produce the displacement of the sand are too slight to be appreciated, though it is most probably owing to a gradual lateral motion of the body, by which the sand is displaced in the centre beneath, and thus gradually forced up at the sides until it falls over and covers the crab. Examine him within twelve hours, and you will find the skin becoming about as hard as fine writing paper, producing a similar crackling, it compressed; twelve hours later, the shell is sufficiently stiffened to require some slight force to bend in, and the crab is said to be in *buckram*, as in the first stage it was in *paper*. It is still helpless, and offers no resistance; but at the end of thirty-six hours, it shows that its natural instincts are in action, and by the time forty-eight hours have elapsed, the crab is restored to the exercise of all his functions. I have stated the above as the periods in which the stages of the moult are accomplished, but I have often observed that the rapidity of this process is very much dependent on the temperature, and especially upon sunshine. A cold, cloudy, raw and disagreeable spell happening at this period, though by no means common, will retard the operation considerably, protracting the period of helplessness. This is the harvest season of the white fisherman and of the poor slaves. The latest of the former are now in full activity, wading along the shore from morning till night, dragging a small boat after them, and holding in the other hand a forked stick, with which they raise the crabs from the sand. The period during which the crabs remain in the paper state is so short, that great activity is required to gather a sufficient number to take to market, but the price at which they are sold is sufficient to awaken all the cupidity of the crabbers. Two dollars a dozen is by no means an uncommon price for them, when the season first comes on; they subsequently come down to a dollar, and even to fifty cents, at any of which rates the trouble of collecting them is well paid. The slaves search for them at night, and then are obliged to kindle a fire of pine-knots on the bow of the boat, which strongly illuminates the surrounding water, and enables them to discover the crabs. Soft crabs are, with great propriety, regarded as an exquisite treat by those who are fond of such eating; and though many persons are unable to use crabs or lobsters in any form, there are few who taste of the soft crabs without being willing to recur to them. As an article of luxury, they are scarcely known north of the Chesapeake, though there is nothing to prevent them from being used to considerable extent in Philadelphia, especially since the opening of the Chesapeake and Delaware canal. The summer of 1829 I had the first soft crabs from Baltimore. They arrived at the market in the afternoon, were fried according to rule and placed in a tin butter kettle, then covered for an inch or two with melted lard, and put on board the steamboat which left Baltimore at five o'clock the same afternoon. The next morning before ten o'clock, they were in Philadelphia, and at one they were served up at dinner in Germantown. The only difficulty in the way is that of having persons to attend to their procuring and transmission, as when cooked directly after they arrive at market, and forwarded with as little delay as above mentioned, there is no danger of their being the least injured.

At other seasons, when the crabs did not come close to the shore, I derived much amusement by taking them in the deep water. This is always easily effected by the aid of proper bait; a leg of chicken, piece of any raw meat, or a salted or a spoiled herring, tied to a twine string of sufficient length, and a hand net of convenient size, is all that is necessary. You throw out your line and bait, or you may fix as many lines to your boat as you please, and in a short time you see,

by the straightening of the line, that the bait has been seized by a crab, who is trying to make off with it. You then place your net where it can be conveniently picked up, and commence steadily but gently to draw in your line, until you have brought the crab sufficiently near the surface to distinguish him; if you draw him nearer, he will see you and immediately let go, otherwise his greediness and voracity will make him cling to his prey to the last. Holding the line in the left hand, you now dip your net edge foremost into the water, at some distance from the line, carry it down perpendicularly until it is five or six inches lower than the crab, and then, with a sudden turn on it, bring it directly before him, and lift up at the same time. Your prize is generally secured, if your net be at all properly placed; for as soon as he is alarmed, he pushes directly downwards, and is received in the bag of the net. It is better to have a little water in the bottom of the boat to throw them into, as they are easier emptied out of the net, always letting go when held over the water. This a good crabber never forgets, and should he unluckily be seized by a large crab, he holds him over the water, and is freed at once, though he loses his game. When not held over the water, they bite sometimes with dreadful obstinacy, and I have seen it necessary to crush the forceps or claws before one could be induced to let go the fingers of a boy. A poor black fellow also placed himself in an awkward situation; the crab seized him by a finger of his right hand, but he was unwilling to lose his captive by holding him over the water, instead of which he attempted to secure the other claw with his left hand, while he tried to crush the biting claw between his teeth. In doing this, he somehow relaxed his left hand and with the other claw, the crab seized poor Jean by his under lip, which was by no means a thin one, and forced him to roar with pain. With some difficulty he was freed from his tormentor, but it was several days before he ceased to excite laughter, as the severe bite was followed by a swelling of the lip, which imparted a most ludicrous expression to a naturally comical countenance.

The Governor of North Carolina says, in reference to the facilities afforded by alluvial countries for railroads, "North Carolina can erect a railroad for what it would cost the eastern states to make provisions for commencing it."

"Are you there true penny?" Have you discovered, at last, the local advantages you possess? Come, we are glad—we rejoice that our sister state begins to find her wealth in her soil. Her tar, pitch and pine boards, have always found a good market; let her enterprise and industry, guided by railroads and internal improvement, find a better. Mark us, brothers, we in the north have no petty jealousies. Your prosperity is ours. Lead on, and we will follow—so you like not to follow us; but let our rivalry be noble—let it tend to the well-being and advancement of the whole country, and we will never quarrel about "Chinese hams," or "wooden outniggers." Give us your fist, and a hearty shake for "Auld lang Syne," when our fathers stood shoulder to shoulder and fought the good fight of Independence.—*Boston Transcript*.

A good method of punishing the lazy at Hamburg, is described in the following paragraph, from Elliot's travels in the North of Europe:

"I remember to have read in some English work an account of a curious plan adopted here, for the punishment of the idle. They are said to be placed in a basket, and suspended over the table in the house of correction, while the rest of the inmates are at dinner; and to be detained in that position, tantalised by the savoury fumes, till night; by which time it is presumed that they have acquired sufficient experience to induce them to work the following day."

Count towels, sheets, spoons, &c. occasionally, that those who use them may not become careless.

(General Advertisement.)

SEEDS, TREES, PLANTS, DOMESTIC ANIMALS,
IMPLEMENTS, BOOKS, &c. &c.

For sale at the

AMERICAN FARMER ESTABLISHMENT,

No. 16, South Calvert street, Baltimore, Md.

THE subscriber presents his respects to farmers, gardeners, and dealers in Seeds throughout the United States, particularly his customers, and informs them that he is receiving from Europe, from his own Seed Garden, and from various parts of this country, his annual supply of **FIELD AND GARDEN SEEDS**; and that he will, by the first of November, be prepared to execute orders, wholesale and retail, with promptness and accuracy, at as low prices and on as favorable terms as can be afforded by any dealer in the United States, for first rate articles.

FRUIT and ornamental trees and plants, grapevines, shrubbery, bulbous and other flower roots, will be procured to order from any of the principal Nurseries or Gardens in this country, for most of which the subscriber is agent; also,

PLOUGHS, harrows, cultivators, straw cutters, wheat fans, corn-shellers, threshing machines and all other kinds of Agricultural and Horticultural Implementments, will be procured from the best manufactories in Baltimore.

DOMESTIC Animals, particularly cattle of the Improved Durham Shorthorn, the Devon and the Holstein breeds; sheep of the Bakewell, Southdown, and various fine wooled breeds; swine of several valuable kinds, especially of the Barmitz breed; various kinds of poultry such as the white turkeys, Bremen and Westphalia geese, game and other fowls and several other species of animals, all of choice breeds (and no others,) are either kept for sale at the experimental and breeding farm of this Establishment, or can be procured from the best sources, to order.

BOOKS, Agricultural, Horticultural and Botanical, in much greater variety than at the bookstores—some of them rare and particularly valuable, are kept constantly for sale.

In short, all articles wanted by farmers and gardeners in the prosecution of their business, are intended either to be kept on hand, or within reach when called for.

And though last, not least, that old and well known vehicle of knowledge (the most valuable of all commodities for a tiller of the soil)—the **AMERICAN FARMER**, is published weekly, at this Establishment, at \$5 a year, where subscriptions and communications are respectfully solicited; addressed, as all letters must be, to the editor and proprietor.

I. IRVINE HITCHCOCK.

Note.—An "Extra" number of the American Farmer, containing a Prospectus of the Establishment, and a catalogue of Seeds, and other articles for sale, will be sent gratis to any person who shall furnish his address, post paid, for that purpose.

SWINE—BARNITZ BREED.

Several boars (but no sows) of this breed are now for sale at this establishment. They were farrowed August 19th, and are now ready for delivery, at \$5 each.

I. I. HITCHCOCK,
American Farmer Establishment.**DEVON CATTLE—CHEAP.**

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

I. I. HITCHCOCK,
Amer. Farmer Establishment.**MONTHLY BUSH ALPINE STRAWBERRY.**

A few plants of the monthly, or overbearing Alpine Strawberry, without runners, both red and white, may be had at the American Farmer Establishment.—Price \$1 per dozen.

I. I. HITCHCOCK.

HOLSTEIN CATTLE.

A bull and cow, each three years old, very handsome and the cow an excellent milker may be obtained by immediate application to the subscriber. Price of each, \$100.

Also, a bull calf of last spring, half Durham Shorthorn and half Holstein, a very superior animal. Price \$50.

The Holstein is a favorite breed of cattle at the celebrated Orange farm dairy near Baltimore, and they are held in equal esteem by Mr. Barny, whose dairy near Philadelphia is one of the best in the country and whose opportunities of judging are unsurpassed. Apply to

I. I. HITCHCOCK,
American Farmer Establishment.**FINE CALVES.**

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Shorthorn and half Alderney. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

I. I. HITCHCOCK,
American Farmer Establishment.**MORUS MULTICAULIS,**

(New Chinese Mulberry.)

Of this tree, unrivalled in its excellence for feeding silkworms—quick in its growth and hardy in its constitution; yielding far more nutriment for the worm in the same bulk than any other tree known, and making silk of a very superior quality—a full supply will be furnished at this establishment, at seventy-five cents each; seven trees (including packing) will be sent for \$5, and fifteen for \$10. The trees will be ready for delivery 1st of November.

I. I. HITCHCOCK,
American Farmer Establishment.**WANTED.**

All kinds of **GRASS SEED**, for which a fair price will be given, by

I. I. HITCHCOCK,

SEED GRAIN.

For sale—Seed rye, red bearded and blue stem wheat—also, white bearded, white stiff stem wheat; the above are all of prime quality and clean; the white stiff stem is valued for its fine quality, and yield, and also, for its standing much longer than other grain when ripe.

Oct. 3.

J. S. EASTMAN.

AGRICULTURAL IMPLEMENTS,

Seeds and Fruit Trees.

SINCLAIR & MOORE, corner of Pratt and Light streets, offer for sale a general assortment of the most approved kind of **PLOUGHS** of various sizes and patterns—both with wrought and cast shears—also, extra shears and heels to supply the demand for old Ploughs.

CYLINDRICAL STRAW CUTTERS of the following sizes and prices, viz.—11 inch box, \$27—14 inch do. \$45—16 inch \$55—20 inch do. \$75—this last size is a very powerful machine, and is adapted to horse or water power, but may be used advantageously by hand. The smallest size of these boxes will cut 300 bushels per day, the 14 inch box will cut about 700 bushels per day—also, common straw cutters at \$5 to \$7 50.

CORN SHELLERS with vertical wheels, the most durable and efficient kind—Lanes' Patent **THRESHING MACHINE** and **HORSE POWERS**—Improved **WHEAT FANS**, Harrows, Shovels, Spades, Mattocks, Picks, Brier Hooks, Cast Steel Axes of superior quality, &c. &c. Clover, Timothy, Orchard Grass, Herds Grass, Tall Meadow Oat Grass, Lucerne and White Clover Seeds.

FRUIT TREES, a great variety—Catalogues to be had at our store.

N. B. The inconvenience and expense of collecting small accounts at a distance has induced us to adopt as a general rule of business, that all small bills must be settled in cash or town acceptances on delivery of the articles—a discount in prices will be allowed for cash, where the articles purchased are of sufficient amount to be an object.

Oct. 3.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; 40 ground leaf, 3.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red 4.50 a 5.00; fine red, 6.00 a 5.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.90 a 15.00; yellow, 6.00 a 20.00.—Fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —. Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 561 hds. Maryland; 49 hds. Ohio; and 6 hds. Ken.—total 456 hds.

Flour—best white wheat family, \$7.00 a 7.50; 2d quality, 6.50 a 7.00; super Howard-street, 6.00 a 6.12½ (wagon price, 5.87½, a —) city mills, 6.00 a — city mills extra 6.25 a —.—Corn Meal per 100 lbs. 1.50 a 1.56;—Grist, new red wheat, 1.14 a 1.18; white do 1.20 a 1.30.—Corn, white 63 a 64, yellow, 66 a —Rye, 67 a —, chop rye per 100 lbs. 1.50.—OATS, 35 a —.—Beans, 75 a 80.—Peas, 65 a 70.—Clover-seed 5.50 a 6.50.—Timothy, 3.00 a 3.50.—Orchard Grass 3.00 a —.—Tall Meadow Oat Grass 2.50 a —.—Herds', 1.25 a —.—Lucerne—a 37½ lb.—Cranseed 1.37 a 1.50.—Cotton, Va. 15 a 16; Lon. 17 a 19; Alab. 15 a 17; Tenn. 15 a 16; Upland 16 a 17.—Wool, hds. 1st 1.20½ a —; in lbs. 31½ a 32½.—Wool, Washed, Prime or Saxony Fleece 60 a 70; American Full Blood, 52 a 55; three quarters do. 47 a 52; half do. 42 a 47; quarter do. 37 a 42; common 37 a 42. Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 25 a 28; half do. 24 a 25; quarter do. 24 a 25; common, 24 a 25; Hemp, Russia, ton, \$170 a 180; Country, dew-rotted, 6 a 7e lb. water-rotted, 7 a 8e.—Feathers, 38 a 40;—Plaster Paris, per ton, 4.25 a —; ground, 1.37½ a —.—bbbl. Iron, gray pig for foundries per ton 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.50 a 5.00.—Oak wood, 3.00 a 3.75; Hickory, 4.25 a 4.75; Pine, 2.37½.

Wool—We are of the opinion that the price of wool is as high now as it is likely to be this season and that those farmers who have not sent their wool to market, would promote their own interest by sending it immediately.

HERD'S GRASS SEED—Is higher than has been usual, but we think is likely to maintain its present price. It has been too low for the interest of farmers.

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Editorial—Rhode Island Classical, Agricultural and Mechanical School—Castor Oil for Lamps—Mammoth Calf—Internal Improvement—Scraps—To Preserve Dahlia Roots—Poetry—Gama Grass—Mangel Wurtzel; Soil, Mode of Culture, Time of Sowing, Comparative Qualities, Objections, Value as Feed—Anecdote—Indian Corn, quantity which may be produced to the acre—Simple Method of Destroying the Hessian Fly—The Wheat Insect—New Way to Grow Early Potatoes—General View of the late Exhibitions and Celebrations of the Various Horticultural Societies—Notes on the Importance of Dispersing the Various Valuable Productions of the Earth—The Villa of Fromont, on the Seine—To Prepare Vegetable Mold quickly—Scraps—Crabs, from the Journal of a Naturalist—Scraps—Prices—Advertisements.

The American Farmer,

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TERMS.

1. Price five dollars per annum; due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

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THE FARMER.

BALTIMORE, FRIDAY, OCT. 18, 1833.

We beg leave to call the attention of our readers generally, to an article in our miscellaneous department this week. It is a letter from J. M. Porter, President of the Agricultural School at Easton, Pa.—The subject of education in general, is one which must interest every parent and the particular species of education offered by this and every other similar establishment ought to command the serious attention of the farmer. The importance of these agricultural and horticultural schools, has not yet been so clearly seen in our country as in Europe, (particularly on the continent)—where their utility has long been felt and acknowledged. A French periodical in one of its Nos. under date of April, 1830, says, that from 1827, until November 1829, there had been established in the kingdom of Wurtemberg alone, 41 public horticultural schools, and 203 other institutions which had for their principal object instruction in the culture of forest trees. In the former 41 schools, there had been educated 1,316 pupils, and in the others, 5,285 (!) We will content ourselves at present with laying before our readers this *fact* and again recommending to their perusal, the letter above mentioned; intending to offer to their consideration in a future number, some further remarks on this very important subject.

We must not forget to thank Mr. Porter for his very acceptable communication; we shall be happy to receive the "report" he promises us, and will lose no time in giving our readers an account of it and of the **TERMS** as there stated.

DURATION OF VITALITY IN CERTAIN SEEDS.—"In one of our recent visits," says the National Gazette, "to Carr's Bartram Garden, we remarked among its botanical curiosities a collection of young ferns grown last spring from seeds, which were scraped off from dried specimens, that have been preserved in books more than sixty years. They were part of the original specimens collected by Dr. Selander, who accompanied Captain Cook in his voyage from 1763—1770. They have grown as strongly as if taken from fresh plants."

On perusing the above, we recollected having once read in a valuable little French work, several examples of "longevity" (if we may be allowed to use the term) in seeds, which may hold a place by the side of the one given by the Gazette.

Bernard de Jussieu, (uncle of the celebrated Antoine Laurent, author of the Natural System) during his stay in Peru with Condamine, had sent to the Jardin du Roi at Paris, a paper of seeds of the sensitive plant, (*Mimosa pudica*.) Of these same seeds, a very small portion was sown every year for sixty years, and they always vegetated perfectly.

M. Girardin, of the Botanical department attached to the same garden, in 1806, found, on looking over the Herbarium of the celebrated Tournefort, certain loose seeds belonging to some leguminous plant. They were sown and germinated very well. These seeds must have been laid up for at least a century in the Herbarium since its illustrious owner died in 1708, on the 28th December.

On the other side of the account, we know of many seeds which will not retain their vitality more than a year or two, and many which lose their vegetative powers, if not sown almost as soon as gathered. Whence this difference? Does it depend on the degree of maturity of the seeds when gathered; on variations of the temperature in which they are kept? or on what other unknown circumstance. Our knowledge on this subject is as yet very imperfect; cannot some of our physiological friends enlighten us?

No. 32.—Vol. 15.

ANOTHER CANAL is in contemplation to run from Rochester to Olean, N. Y., connecting the Erie Canal with the Allegany river at the head of navigation. It will be 90 miles long, passing through the counties of Allegany and Livingston. The writer who describes it, says, "the sun never shone on a more fertile country." The county of Livingston has produced a million of bushels of wheat the present year. Much of the land will yield 40 bushels per acre."

We are indebted to the liberality of our friend, S. Canby, of Wilmington, Del. for a pair of ferrets for our collection of useful animals. The female is heavy with young.

This valuable present is very apropos, it being our intention to keep at our experimental Farm and Garden, as complete a collection as possible, of every kind of animal which has been rendered serviceable to man, either as assisting him by their labor, nourishing him with their flesh, defending him against the depredations of his numerous small enemies, or ministering to his pleasures.

CATTLE ENQUIRY.—A subscriber in North Carolina, wishes information in relation to the comparative adaptation of the different breeds of improved or imported cattle to the climate of the Southern States, particularly those south of Virginia. He asks, "are not the North Devons best fitted to our southern climate and short pastures?" Will some of our subscribers who have tried the different breeds, and especially the Devonshire, enlighten him.

BARBEROUS!—Common candle snuff, clear of grit, spread on a razor strop, produces the best edge, in the shortest time, of any thing ever tried; so says a New York paper; and they are "up to snuff" in the Empire state. The coat should be spread with a knife—not too thick—and it will last for months. There is no "patent" for this discovery; any one may avail himself of it without burning his fingers—provided he uses snufflers. Neither Noyes, Pomeroy, nor Emerson, nor any of the stoppers "can hold a candle to it."

HOPS IN NEW YORK.—The demand from abroad has been so great this year that nearly the whole crop has been shipped off. The export has been generally to France, and some to Germany, at prices generally below 15 cents. The shipments have been so great that there is not enough left for our own consumption. The consequence is, that the few in market have been monopolized, and the price run up to the unprecedented rate of 75 cents and a dollar. The few sales that have been made for the last week, have been at 75 cents for first rate, 30 to 40 cents for second, and 10 to 15 cents for poor.—*N. Y. Com. Adv.*

[We have received a letter from a friend in Havre, recommending to the attention of American cultivators, the lup, as likely to prove a very profitable article of export to France. According to the above extract, the exportation prices have been low, but in consequence of the increased rate on this side the Atlantic a rise must be looked for.]

NEW IMPROVEMENT.—A machine has recently been constructed by a Mr. Job White, of Belfast, Maine, by which a saw, of the proper form, is made to operate lengthwise of the log, cutting round it, and approaching the centre in a spiral direction, in such a manner as to cut the log into one continuous board. The board unwinds from the log, like the cloth from a weaver's beam.

This invention will be of great value to carriage makers, who use bass-wood boards for panels, as they may be cut from much smaller, or even hollow logs. [*Northern Farmer.*]

PLOUGHING IN CLOVER FOR WHEAT AND CORN.—A farmer, in a communication in the Columbian Sentinel, says, by the aid of gypsum, and by ploughing in the clover, land can be brought into a high state of cultivation, allowing a rapid succession of crops, that are constantly improving. The farmers in his vicinity are fast adopting this easy and cheap method of enriching their farms. One ploughing, allowing the clover to ferment undisturbed, is considered to produce double the crops that two or more ploughings would.

[A gentleman with whom we were conversing recently informed us, that in some parts of the western country—Tennessee, we think—the farmers sow clover on their land but once, continuing it thus: as often as the land requires breaking up, they turn in a crop of ripe clover, sow a crop of wheat, harrow it in, and after harvest plough the land again, which causes the clover seed that had lain dormant a year to come forth with renewed vigor.]—*Ed. Am. Farm.*

A northern paper has the following:—"A freak of nature has been discovered in the garden of Mr. Isaac Buswell, of Bradford. A large English turnip grew upon the same stalk which bore a perfect cabbage; the turnip is about six inches in diameter."

We recollect once to have heard of a personage "down east" who stated that he had caught a Jack-o'-Lantern in his hat: on being asked by a naturalist to whom he had related the fact, "what it was like when he had caught it," he responded in characteristic phrase—"and after all, it wasn't nothin'." We fear our friend at the north is in a similar predicament with regard to his discovery.—*Query.*—Has he ever heard of such a production as the *Turnip rooted Cabbage*?

RECIPE FOR CROUP.—Dr. Godman has recommended the following as a certain, as well as a simple remedy for a common and often fatal disease among children. He says, "whenever they are threatened with an attack of croup, I direct a plaster covered with dry Scotch snuff, varying in size according to the age of the patient, to be applied directly across the thorax, and retained there till all the symptoms disappear.—The remedy is found to be always effectual when applied in the first and second stages of the malady." The plaster is made by greasing a piece of linen, and covering it with snuff.

TO PRESERVE WINTER APPLES SOUND.—After the fruit has arrived to perfect maturity, gather it by hand from the tree, in dry weather, select the finest, wrap them carefully in paper, and place them in fresh barrels in a dry cellar. The barrels should be tightly headed.—Or, after the barrel has been carefully filled with apples without the wrapper, pour over them dry sand from a brickyard until the barrel is filled—the sand will easily find its way to the bottom and completely fill the crevices. We have tried both ways with much success, but prefer the former, as it is difficult perfectly to remove the sand from the apples preserved in it. We have now perfectly sound apples of last year's production, which have been kept in papers. The paper of the Messenger, we think, is admirably adapted to this purpose, and those of one year's subscription would be sufficient to paper a barrel of apples, and would in this way alone amply compensate the subscriber.—*Frankford Messenger.*

AMERICAN SOFT SHELLLED ALMONDS.—We have had sent to us some delightful *soft shelled* Almonds, being part of a crop of about a bushel, which was raised by Mr. Warren Millin, near Camden, Del. This is what we should not have expected, from the clay soil of that section of the "little state"—and the complete success of Mr. Millin must be attributed to that care and skill in such matters as will ensure the most abundant success in other more genial districts. [*Philadelphia Chron.*]

AGRICULTURE.

(From Nicholson's Farmer's Assistant.)

MANURES.

A knowledge of the efficacy of different manures, to what soils they are most suitable, and the means of making the most of each, is worthy of the particular attention of the Farmer. Lands are seldom so rich, but it may be a matter of gain to increase their fertility; and few tracts are so poor but, with proper manure and manuring, they may be made the residence of plenty.

Manures are composed of all those substances which, either directly or indirectly, supply plants with their requisite food, by means of which they are enabled to expand and come to maturity.

In the first place, different earths will serve to manure each other. Thus, clay is a fertilizer of a light sandy soil, and sand is equally a fertilizer of clay.—When clay lands are in grass, the sand should be laid on as a top dressing; but where they are ploughed, it should be well mixed with the soil, for the purpose of destroying its adhesion. Sand which has been washed down roads and elsewhere is best. Where clay is applied to a sandy soil, it should be carted on in the fall, and spread evenly over the ground, that the frost may pulverize it before it is mixed with the soil in the spring.

The better these earths are mixed in the respective soils, the more sensible and immediate will be their effects; but their principal excellence is, that they are calculated permanently to improve the soils to which they are applied. Still loams are also in the same way assisted by sand, and sand again by these; but neither to so great a degree as in the former case.—Generally, it may be observed, that all light dry soils are improved by being mixed with heavy earths, and *vice versa*.

Sand and fine gravel will greatly fertilize the soil of bog-meadows, and this earth again is a very good manure for all upland soils. It is peculiarly excellent for Indian corn, when applied to the hills, and is very good for flax, hemp, and most other summer crops.—Like gypsum, it is friendly to the growth of white clover. When applied to upland grasses, it should be laid on as a top dressing. Every kind of black mud, from ponds and swamps, answers a somewhat similar purpose; though, if the mud be stiff and clayey, it should only be applied to a light dry soil.

The different sorts of marl found in bog-swamps are also excellent manures for all upland soils. These earths are usually found at the depth of from one to three feet from the surface, and are either of a white, gray, or brownish color. The former is the most efficacious, and the latter the least; so their strength being in proportion to the quantity of carbonate of lime they contain. It is best to mix these earths with the mass of black earth, or bog-dirt, that forms the upper stratum, in order to reduce their strength; and, when thus mixed, a load of even the weakest kind is more efficacious than two of common burning.

Their operation as manures is similar to that of the Nova Scotia gypsum, having little or no effect when first applied to wheat and rye; but, by its afterwards covering the ground with a thick growth of white clover, it is then rendered fit for producing largely of these crops. The same may be observed of the bog-dirt. Like this, too, these marls are peculiarly excellent for Indian corn, and all summer grain, and a less quantity is sufficient. They may be used as top-dressings, or otherwise.

The upland marls are good manures for sandy, gravelly, and other dry soils. They are also valuable in proportion to the quantity of carbonate of lime they contain. Mr. Young mentions the tract of country lying between Holkam and Houghton, in England, having been converted into good farming lands, which formerly were so light and poor as to be kept only for

sheep-walks. This was effected by digging up the marl, which was found to lie at some depth underneath, and manuring the soil with it, at the rate of about one hundred loads to the acre.

This kind of marl is merely a clay, with sometimes a mixture of fine sand; having a greater or less proportion of carbonate of lime in it; and the more the better. It is generally of a bluish color, and like other marls is to be known by the effervescence it occasions when dropped into vinegar, or other stronger acid.—The greater the effervescence the better the marl.

See Henry's Chemistry, for the means of ascertaining how much calcareous earth any marl contains.

Upland marl should be carted out in the fall, and spread as directed for clay. The other kinds should be thrown up in a dry time in the fall, and may be carried out in the winter, or other time when the ground is sufficiently firm for the purpose.

Ashes, as a manure, are found to be more efficacious in some parts of the country than in others; generally most so when applied to lands near the ocean. The Long Island farmer can afford twelve cents a bushel for even leached ashes; while, in Herkimer county, they are suffered to lie untouched about the potash-eries.

Ashes generally answer the most valuable purpose when applied to Indian corn, particularly where the soil is not suitable to this plant. Where the soil is wet, cold, loamy, or clayey, the plants are apt to get stunted by the cold rains which usually fall after planting; and then the ashes serve to supply the natural deficiencies of the soil, till it becomes fertilized by the summer sun. But, where the soil is natural to the growth of this plant, and there is no danger of its being stunted at its outset, perhaps it may be better to apply the ashes later; so that the plants may derive the greatest assistance from this manure, while the ears are setting and forming.

Ashes should generally be used for top-dressings: their salts lose nothing by exposure to the air, and soon find their way into the soil.

Soot is much more efficacious than ashes; beside salts, it contains oil. The soot of coal is esteemed equally as good as that of wood. It is used for top dressings, and requires about forty bushels for an acre. When applied to winter grain, it should be sown in the spring; and the same may be observed of ashes. Coal soot particularly is very good for meadow-lands which have become sour and mossy. This manure can, however, only be had in considerable quantities in large towns.

Of salts, which serve as manures, the principal are the common sea-salt, urine, stale of cattle, sea-water, saltpetre, and alkaline salts. To the latter, the virtue of ashes, as a manure, is principally owing. Soap-suds is in part valuable on account of its alkaline salts, and perhaps the neutralized oil it contains adds much to its value. It is usual to throw this manure away; but this is a needless waste. It may be taken in the watering pot, and strewed over the garden, where it will be of great service as a manure, and in expelling insects.

We shall presently say something further of this, and other manures afforded from the dwelling house.

Saltpetre should be dissolved in ley of wood-ashes, in which seed should be soaked before sowing or planting.

Perhaps old urine, or even common salt, would be found a valuable addition, in making a liquor for steeping seed before sowing.

Sea-water is said to contain saltpetre, sulphur and oil, beside common salt: and is therefore preferable to the latter article for manuring, when put in composts, or otherwise.

Mr. Deane makes mention of a hundred hills of potatoes, which had two quarts of water applied to each, immediately after planting; and he says that the product of these was one-half more than the same number of adjoining hills produced. Most probably, a quart to each hill would have been better.

He mentions also a piece of flax, of which one side was short and yellow; but, on its being sprinkled with this water, it equalled the rest of the piece in about ten days, and eventually was the best.

These two experiments were made on stiff soils, but he says he found sandy grounds equally benefitted by this manure.

This water might be carried from the sea some distance on the land, to advantage, in the following manner: Take a one-horse cart, and suspend a tight box, rightly shaped, under the axle-tree; the box having a valve in the under side; drive the cart into the water, and the valve opens, and lets that fluid into the box; and, when the cart is driven out, the valve closes and holds the water.

When the cart is driven out to the ground on which the water is to be spread, this operation may be performed in the manner we shall next describe: A tube is to be provided, say twelve feet in length, with small holes bored into it at the distance of six inches apart, and the ends of the tube close; attach this to the under side of the box, crossways, at either end, so as to be out of the way of the wheels of the cart.

When you come to where the water is to be spread, it is to be let out of the box into the tube, by an aperture for the purpose; and as the cart moves along, the water runs out of each of the small holes in the tube, and thus sprinkles over a piece of ground of twelve feet wide, till the whole is exhausted.

With the next load, begin where the water ceased running before, and thus continue the watered strip across the field. Then take another strip of twelve feet wide, adjoining that already watered, and thus proceed until the whole has been gone over.

In this way, one man could carry out, say, forty cart loads a day, at the distance of half a mile, or half that number, if a mare; as but little time need be spent, either in loading or unloading. About ten loads, of a hundred gallons each, would probably be sufficient for an acre at any one time.

But this is not all that may be done with sea-water: It may be drove any distance into a country, in aqueducts for the purpose, with the aid of wind machinery. Say, for instance, that it can be drove on ascending lands, to the height of an hundred feet, with one wheel and crank turned by the wind. When raised that height, and emptied into a cistern for the purpose, it may, in the same way, be drove up to the height of another hundred feet, by another wheel and crank turned as before; and so on to any given height required. So that the highest cultivable lands, or those most remote from the sea, may in this way, and with the cart before described, be manured with sea-water.

The sprinkling of the water over the land may be done at a small expense, as we have just shown. The principal expense, therefore, is the aqueducts for carrying the water. These, if made of wood, would probably cost a thousand dollars a mile, including all other necessary apparatus. Every mile in length would serve for two square miles of land. The wood forming the aqueducts, being constantly saturated with salt water, would probably last a century. The expense, at this rate, would fall short of ten cents per acre, by the year.

In addition to the use of the water for manure, a great saving could be made in the use of salt, for cattle, and in various other ways in which this liquid might be, in part, a substitute for that article.

The method of driving water up an aqueduct is by a plunger and two valves; one within the aqueduct to keep the water from returning, as the plunger is drawn back by the crank; the other within the plunger; and, while this is receding, its valve opens to let in more water, and shuts again while the plunger is advancing; and at this time the other valve opens to let the fresh supply of water pass through it. Thus, the valves open and shut alternately, similar to those in a common pump.

Whether the advantages to be derived from putting a plan of this kind into operation, would warrant the

expense, must depend on the result of experiments to be properly made.

On some parts of our seacoast it would be impracticable; particularly on most of that of North Carolina; where the wide and extensive bodies of fresh water forming the Albemarle and Paullico sounds lie between the sea and most of the main land of that state.

But there is much of our coast, and the contiguous islands, which offer many millions of acres to be benefitted by this method of manuring lands.

The stale of cattle is in part valuable, on account of its containing more or less of common salt, and perhaps in part from its tendency to produce miasma, septon, or azote, some or all of which assist the growth of plants. The older the stale the better it is, as a manure.

Under soiling, one method of saving it is mentioned, and another will be spoken of before we close this article.

Urine from the domicile is still more valuable, as possessing the properties of that of cattle, but in a higher degree, and should always be saved in the manner we shall presently mention. It has a powerful effect, when sprinkled over grass-grounds.

Common salt is considered more efficacious, when mixed in composts, than when applied in its crude state to the soil. Mr. Elliot makes mention of five bushels of this manure being sown, in its crude state, on an acre of flax, and that it had a surprising effect. We have seen this crop very much assisted, with the application of only two bushels of it to the acre.

An intelligent farmer once observed to us, that during our revolutionary war, when this article was so dear that he could not afford to give it to his cattle, his barn-dung seemed to be of but little service to his lands; but that he found the case much altered, when he could again afford to deal out a sufficiency of it to his stock.

We will also here mention a small pamphlet we saw in Maryland, some years since, which was mostly the certificates of planters of the interior of that state, describing the surprising effects produced on lands there, by sowing a mixture of salt and fine mold upon them; particularly when applied to crops of wheat and flax.

These lands were such as had become much exhausted, by constant crops of tobacco and Indian corn; and on which few cattle had ever been raised; of course little or no salt had ever been given them, since they were cleared.

We mention these matters, as inducing our belief that some of this ingredient is highly essential to the productiveness of soils; and that, where they are long destitute of it, a little may have a powerful effect upon them, as a manure.

Nor would we confine this observation to common salt alone: we believe it may be applied to all the salts which operate as manures. If too much common salt be, however, given to lands at once, it will prove injurious, for a while at least; and perhaps the same holds equally true, in regard to the other salts.

We have seen a late newspaper publication, which very highly recommended common salt, as a manure for turnips. Mr. Deane, however, says he once made trials of it upon this crop, upon onions, and on carrots; and that the latter crop only was benefitted by the application.

Perhaps he either applied too much to the two former crops, or the soil might not have required any addition of this ingredient; as we have seen a little of it used very successfully, as a manure for onions.

Whether common salt may be profitably applied, as a manure, must depend on its price, its effects on the growth of different plants, and in different soils and situations; as it is supposed not to be so powerful in its effects on lands near the ocean, nor, perhaps, on some soils, as it is on others.

But little attention has been paid, in this country, to the operation of lime, as a manure; though, in some

instances, we have heard of its being very successfully applied.

Under earths, something has been said in regard to lime, as a primitive earth, and as being one of those which are essentially necessary, as a component part, in forming a durably fertile soil.

Lime is of singular use, in destroying the adhesive quality of stiff clays; and it is on soils of this description, and on cold loams, that it has been considered, in Great Britain, as most efficacious. On such soils, the British farmers usually apply about two hundred and forty bushels to the acre, which is considered a full manuring; the effects of which are usually manifest for eight, ten, and twelve of the succeeding crops.

If lime be applied to the lighter and drier lands of that country, not much more than half of that allowance is given at once.

An opinion was held by Mr. Livingston, that lime is most suitable to lands in a cool moist climate, such as that of Great Britain; and Mr. Brownel considers it as an improper manure for lands containing much vegetable earth; but perhaps experience may show, that both of these opinions are in a great measure erroneous.

Lime will reduce peat and turf to a mere vegetable earth; but we believe it never proceeds so far in the work of decomposition, as to destroy vegetable matter, or lessen its quantity where it abounds.

It would be desirable that accurate trials of lime were made, in order to ascertain its value in our soils, and whether it should be held in as high estimation here, as in Great Britain, where its use, as a manure, is very extensive.

We will here give the inferences of an experienced practical Farmer of that country, from various trials of lime on clays, on loams, and on sandy loams on a close retentive bottom.

1. That lime operates equally well, whether applied when fresh slaked, or when it has been some time slaked, provided the condition of the ground be such as to render a calcareous application beneficial.

2. That it is not material, whether lime be used on grass-land, or on summer-fallow; but may be applied as may be most convenient, especially on new clean grass-land. On land which has long lain in grass, it is thought best to take one crop after breaking it up; and then to summer-fallow, and apply the lime.

3. That to lime moorish soils is hazardous, unless dung be likewise bestowed; and to repeat the application, especially where such soils have been severely cropped, is almost certain loss; and that a compost of lime and rich earth is, in such case, the only proper substitute.

4. That strong loams and clays require a full dose, to bring them into action, as such soils are capable of absorbing a great quantity of calcareous matter; and that lighter soils require less lime, to stimulate them; and may be injured by a quantity that would prove but moderately beneficial to those of a heavy nature.

5. That upon fresh land, or that which is in a proper state for an addition of calcareous earth, lime is much superior to dung, as its effects continue for a longer time, while the crops thus grown are of a superior kind, and are less liable to be injured by drought, or by excess of moisture; and that the stiff soils particularly are so much easier worked, when well limed, that this circumstance alone is almost a sufficient inducement to apply lime to such grounds, if it possessed no fertilizing properties.

Finally, that though strong soils require to be animated with a good dose of lime, while those of a light texture require but little more than half the allowance of the former, especially where they are fresh, or have not been before limed; still judgment is requisite in the application: But that it is generally safer to exceed the proper quantity, than to be below it; for that, in this latter case, the manure may prove almost wholly useless; while it rarely happens that the ground is injured by an excess of lime, especially if more or less dung be soon after administered.

A circumstance calculated to strengthen the belief, that lime will answer well as a manure, in almost every part of this country, is, that the Romans used it as a manure in Italy, when they conquered Britain, and are supposed to have first introduced it in that Island; for, although the summers of the latter country are much moister and cooler than ours; still those of the former are nearly as warm, and perhaps full as dry, as the average of summer weather here.

And if lime enables crops the better to withstand droughts, which are often more severe here than in Britain, this would seem to be an additional reason for its use, as a manure, in this country.

Lime is also of singular use in producing a high degree of fermentation, in all soils which require it; and this is essential to their productiveness, in every country and climate.

The British writer to whom we have just referred says, however, that experience has shown that lime will not restore lands which have been completely worn out by constant crops of grain. He therefore supposes lime to be merely calculated to bring certain principles into action, which were previously possessed by the soil, and which are probably lost when thus exhausted by severe cropping. But again he says, that all lands are benefitted by lime, "which can be refreshed by grass, or enriched by dung."

We have thus far given the reader the substance of what we find in the latest and best British publications on lime, as a manure: But from information we derive from Dr. Mease, of Philadelphia, we are enabled more particularly to state the quantity proper for an acre in this country; and also, that which has been found most efficacious, as a manure, in Pennsylvania.

We have mentioned two hundred and forty bushels to the acre, as being the allowance for clay soils in Great Britain; but we are induced to believe that where so much is applied, in that country, it must be of lime made from coalk, which is much weaker than that made of limestone.

Forty bushels to the acre is about the usual allowance of lime of this latter description on the lands of Pennsylvania, which are commonly a loam mixed with more or less of either sand or gravel. It is also found that the lands which have there been previously limed, are more powerfully stimulated by the application of gypsum, than those to which lime has not been recently applied.

Under EARTH, we have mentioned that, in Great Britain, lime which has the most magnesia in it is accounted the least valuable; but, in Pennsylvania, it is found the most efficacious.

The quality possessed by lime, of producing a great degree of fermentation, renders it of singular use in making composts. These are frequently made, in Great Britain from mere collections of alluvial or other rich earths, wherever they can be had, and mixing them with lime sufficient to produce the requisite degree of fermentation, which is to be effected by frequently stirring up the mass with the plough, or the shovel; and in this state is carted out, and mixed immediately with the soil.

Composts are also made in some parts of that country, in which peat commonly forms about three-fourths of the mass: the remainder being fresh barn-dung, together with some lime to be laid on the top, to assist in the decomposition of the peat, as the mass becomes properly heated.

The peat and the dung are first to be laid down in layers, in proportion to their respective quantities, until the heap is made about four feet high. Sticks are to be run down into the heap, in different parts of it, to ascertain the degree of heat the mass has acquired; and whenever it approaches to blood-heat, it must be either watered, or turned over, as there is danger of the whole being consumed, particularly in warm weather, if the mass become too warm.

After the heat subsides, which it does in time according to the state of the atmosphere, and the degree of perfection in proportioning the materials of the heap,

it is to lie until about three weeks before it is to be applied to the soil; when it is to be turned upside down, outside in, and a second heat comes on, which must be carefully attended to, as before; and, when this subsides, the mass is to be applied to the soil.

The mass of manure thus made is found to be as good, as the same weight of rotten barn-dung. Care and experience seem, however, necessary in making this manure to perfection. In summer, it may be made in eight or ten weeks: In cooler weather, a longer time is necessary.

Where the peat is taken from beneath the surface, it should be thrown up some time before, for the purpose of drying, and being lighter in transportation. The compost, while making, should be kept as light as possible.

That which abounds on the surface of some swamps and uplands, is readily decomposed by the application of lime, and mixing it with this earth.

We will mention another kind of compost, in which lime is an ingredient, as recommended by the Society of Improvers in Scotland, for making use of the ridges along side of fences, in fields which have been long ploughed.

First plough the ridge deep with a cleaving furrow; then cart on a layer of stiff clay, then a layer of barn-dung, then another of clay, and on the whole a layer of lime, and cover the mass over with ploughed earth from each side, and let it lie a while; then enter it with a deep cleaving furrow, and in this way plough it to the bottom; then go over it again with gathering furrows, until the whole is thrown upon into a high ridge, and in this situation let it again lie to ferment.

Repeat the process of cleaving down, and ridging up, at proper intervals, till the whole mass is well fermented; and then cart it out, and mix it with the soil, at the rate of about thirty-five loads to the acre.

The component parts of manure made in this way, or something similar, should be adapted to the soil intended to be manured.

Mr. Young, of Delaware, greatly improved worn out clay lands, by composts, in which lime was a principal ingredient; and, while the land thus became redeemed from absolute sterility, the soil at the same time became darker in color, and lost that stubborn adhesiveness, so troublesome in clay soils.

Mr. Ashford, of Pennsylvania, put two hundred bushels of lime on nine acres; planted the ground with Indian corn; left one acre unplanted; crop of corn great, where the lime was applied. Next year, summer-fallowed, and had good wheat and rye, where the land was limed. Sowed herds-grass and clover, and applied gypsum to the whole; had a good crop of grass where the land was manured with lime; but poor, where it was not.

This was probably land somewhat stiff, and considerably exhausted. It would seem that stiff lands are commonly very considerably assisted by gypsum, after having been manured with lime.

Mr. Ashford says he ploughs his land for Indian corn in the fall, lays on his lime in the spring, and is never troubled with either worms or weeds. He brings home all his cornstalks in the fall, lays them down, firmly trodden, with alternate layers of lime; and next spring he finds the mass rotted and fit for use.

If he were to add some barn-dung, and some earth, suitable to the soil to be manured, he would find his heap of compost much improved in quantity, and perhaps in quality.

Peach trees, when planted in grass grounds, where they naturally grow but indifferently, are much assisted by strewing some lime round the roots. This probably assists in repelling insects, as well as in serving as a manure for the trees.

(To be continued.)

Forty thousand bushels of wheat, direct from Archangel, have been received at the port of Quebec. This is fulfilling the old adage, of "carrying coals to New Castle."

(From the Louisiana Register.)

OF THE CULTURE OF COTTON.

Many who cultivate this most valuable article, are, I find, wrapped in darkness respecting the management of it. Many who cultivate this valuable plant, manage the planting and tilling in such a manner as will not nett them any thing; whilst there are others within my knowledge, who sink money at the business. But when rightly managed, it is certainly a lucrative crop.

In making the cotton ridges, it is of vital importance to plough deep, and throw the furrows up close, and the ridge should be made early, in order that they may settle before planting. I have seen many farmers that have lost greatly by not setting their ploughs to work early in the season. Procrastination is the cause of failure in many instances, but in none more surely than in this.

If the ridges are not well settled when the seed is put in, the farmer will either have to plough it up again, or replant. The former will throw him very much behindhand in planting, and the cotton, unless it is very much favored in the fall with a late season, will not mature before it is nipped by the frost; the inevitable consequence will be considerable loss. As to the latter, reason itself teaches that the older will shade that which is replanted, and deprive it of its due and necessary share of warmth and nourishment. There should be a very small furrow run on the ridge to plant in, and a very light harrow to cover it with, as it is a seed which is sure to rot when covered deep. When up, it should be scraped as soon as the third leaf makes its appearance. The director or overseer should be present most of his time, to see that the ridge is well scraped; not a particle of the ridge should be left unscraped. I have seen fields of cotton literally lost by this one piece of negligence; they would suffer the workers to leave a small tuft of grass among the cotton, and before it is time to work it again, the grass is towering above the cotton; consequently the cotton is materially damaged. The next thing to be done to cotton after scraping all know to be moulding and hilling. The best plan, I find, is not to have a high ridge; it is not only more apt to retain its shape, but grows larger. I have seen some farmers hill their cotton so high that it would be equal to a potatoe ridge; consequently when there comes a rain, which is most commonly needed in the summer, the water runs directly to the middle, without penetrating the ridge.

Ploughs should be kept going until it is very large, for whenever the ploughs are stopped, the cotton ceases to grow. I recommend topping in August, when cotton is large.

A COTTON PLANTER.

WEEVIL.—The great destruction of wheat produced by this annoying insect, it is said, may be prevented by very simple means. In stacking wheat, if four or five quarts of salt be sprinkled on every hundred sheaves, it will be secured from destruction from the weevil, and will besides make the straw more valuable as fodder. Or if, after the wheat is thrashed, a pint of salt is mixed in every barrel, or the grain be put in old salt barrels, the weevil will not attack it.

Nat. Int.

THE HARVEST.—All accounts from the country speak of the harvest as having been generally plentiful. The wheat crop has not, in some districts, been as abundant as had been anticipated, but the return will still be above an average. The favorable change in the weather within the last two days, has been extremely favorable to the labors incident to this season. The harvest is completely over in England, and the numerous swarms of Irish laborers who had emigrated to England a few days since, are returning daily.—*Dublin Times*.

Cumberland, in one of his comedies, makes a husband say, "Good nature in a wife is like gold-leaf on a pill—it does not alter the dose, but it makes it go down."

HORTICULTURE.

HORTICULTURAL SOCIETIES.

(Continued from page 245.)

We resume our general review of proceedings of the Northern Horticultural societies. We will commence this week with the New York Society. This body held its anniversary celebration on the 10th ult.

"The display of fruit," says the New York Farmer, "was very hand-some, and some among them, particularly a *Bon Chretien* pear, raised in Springfield, N. J. were rare and excellent. The peaches and nectarines were abundant. Of figs, there were some very good. The grapes and melons were not remarkable. The table was ornamented with natural flowers, among which the gorgeous Dahlias predominated. A box of flowers very prettily arranged, was sent by Madame Parmentier, and excited general admiration.

"It was altogether an agreeable entertainment, enlivened with mirth and song, and good wine."

Charles Oakley, Esq. presented 2 plates of Golden Nectarines, very large and fine; 2 plates of Seckel pears, very fine; 2 plates President Peaches; 2 plates Orange Chings; 4 plates Old Mixon Chings; and 2 plates of a new variety of plums.

Timothy Whittemore, Esq.—2 plates of Figs; 1 plate of Lemon Chings; and 1 plate of Vergalieu pears.

E. Wade, jr. Esq.—12 *Bon Chretien* Pears, grown by William Stiles, Esq. Springfield, N. J. three of which weighed 2 lbs. 3 oz. and of a very superior flavor.

E. Danard, Esq.—5 *La Jalouse* pears, very large. J. M. Blair, Esq.—4 bunches of Chasselas Grapes, one bunch of which weighed 2 1/2 oz.

Alexander Walsh, Esq. of Lansburgh—several very fine bunches of the Roman Tree Berries.

Alexander Knox, Esq.—4 bunches Royal Muscadine Grapes.

Mr. William Neale—7 bouquets of Flowers, very beautiful.

Mr. Thos. Hogg—several bouquets of Flowers, very beautiful, among which were 25 varieties of Dahlias.

Mr. Michael Floy—more than twenty varieties of Dahlias, some of which were very beautiful.

Mr. Shaw, Sixth street—2 plates Heath Cling Peaches, and a quantity of Flowers.

Mrs. Parmentier of Brooklyn—a very superior collection of Flowers; among them were five seedling Dahlias, raised by herself, seventeen of the best imported varieties, and a number of other beautiful plants.

The president, J. Lordard, Esq. presided, supported by P. Hone and C. Oakley, Esqrs. vice-presidents, and honored by the presence of many members of the Court of Errors, as guests.

We believe our readers will all respond to the sentiment expressed in the following toast:

"Horticultural Societies in every quarter of the globe—while they unite their efforts to beautify and improve the earth, its flowers and its fruits, may they also contribute to the moral and intellectual improvement of the whole of the human family."

The following descriptions of two varieties of pears may be useful to our readers; they are taken from the New York Farmer.

"The *Bon Chretien* pear, presented by Mr. Wade, three of which weighed 2 lbs. 3 ozs. was raised by William Stiles, Esq. of Springfield, N. J. from a tree imported a few years since from France—a description of which we subjoin.

With regard to the origin of the '*Bon Chretien*' Pear, I am unable to furnish any particulars, other than that the tree which produced the fruit exhibited on the occasion of the late anniversary of our society, was imported from France, by Mr. William Shaw, of this city, in the spring of 1828.

It was taken to New-Jersey, by Mr. Stiles in the month of April, of that year, and was transplanted in merely a *good strong soil*, which was then, and has since been, under annual cultivation for potatoes, melons, &c. Its treatment has been, I believe, in no respect peculiar. The tree produced the last year some twenty or thirty pears, and the present season upwards of one hundred, most of which were equal in size and appearance, to those presented to the society, and amounting probably to 100 lbs. of fruit. It may be added, as an extraordinary circumstance, that the average diameter of the pears was quite as great as that of the body of the tree on which they grew—being about $3\frac{1}{2}$ inches.

The catalogues of several of the extensive gardeners in our vicinity enumerate the "Bon Chretien" among the extensive varieties of our pears; but whether they are the same as that exhibited I have no means of determining, though such is probably the fact. In this case it is to be regretted, that the merits of the fruit have not been more generally known; for it is believed, had the public been aware of its superiority, our private collections and market gardens, would not at this time, have been destitute of so desirable an addition to our stock.

The *Duchess d'Angouleme Pear*, of which the following is a description, is from the garden of Madame Parmentier, near Brooklyn. It grew, with many others of very nearly equal size, upon a small tree, not exceeding eight feet in height. It was taken from the tree before it was fairly ripe, and kept several days, when it became mellow, juicy, and of a highly delicious flavor.

DUCHESS D'ANGOULEME PEAR. The shape of the fruit resembles that of the Doyenne pear, but is larger, yellowish, dotted with gray and brown, on the sunny side of the fruit; melting, highly flavored, and juicy; the taste resembles that of the Crassane pear, but is much finer. It ripens in September and in the commencement of October. The tree grows very rapidly, and is a great bearer."

Those of our readers who have favored us with their attention to this article, cannot have failed to remarked the peculiar stress, which seems to have been every where laid on the production of improved sorts and specimens of fruit. This remark is still more strikingly brought forward in the account of the exhibition of the Massachusetts Horticultural Society. The New England Farmer gives a list of two columns in length, comprising the names of the varieties of choice fruit sent by different contributors. We can give but a few extracts.

"A fine basket of Isabella grapes, &c. from E. P. Hartshorn, of Boston,—also a basket of Black Hamburgh and Sweet Water grapes, from the same—open culture, fine for the season.

A basket of apples, and a basket of seedling pears, from Joseph Merion, Esq. of Milton. Freestone rare-ripe peaches, a very handsome specimen from E. Cowing, of Roxbury.

From E. M. Richards, of Dedham, two baskets of natural peaches, superior, two baskets of Benoni apples, large, one basket of Red Juniata.

From Madame Dix, Boston, a basket of Dix pears, very fine.

From Charles Oakley, Esq. of the city of New York, a basket of Heath Clingstone peaches, a basket of plums, name unknown, a basket of Orange Nectarine Clingstone seedlings, a basket of Orange clingstone seedlings, a basket of seedling pears, a basket of pears, called Vergalieu in New York, the St. Michael in New England, a basket of peaches, name unknown, all beautiful and some splendid specimens.

From Dr. Webster, of Cambridge, a variety of flowers also a vegetable called Glascol Rabbi, (?) a basket of almonds, open culture, a basket of white Chasselas and red Chasselas grapes, a Persian and one other variety of melon, very fine.

From E. Breed, Esq. of Charlestown, two large decorated baskets, consisting of the white Muscat of

Alexandria, the St. Peters and black Hamburgh grapes, Bartlett and Roussellet de Rheims pears, and a variety of peaches, very beautiful specimens.

From Mr. Mason of Charlestown, a basket of green citron melons, 3 baskets, containing Malta peaches and nectarines, 4 baskets containing black Hamburgh grapes, and one of Miller's Burgundy grapes, also yellow muskmelons, very fine specimens.

From Joshua Childs, Boston, a basket of Manilla grapes, a beautiful specimen.

From David Fosdick, Charlestown, a very beautiful ornamented pyramid basket of white Muscadine and Isabella grapes, and a variety of apples and peaches.

From Enoch Bartlett, Esq. of Roxbury, two baskets of beautiful peaches, and a splendid specimen of Porter apples.

From Zebedee Cook, jr. Esq. of Boston, 1st Vice President of the Society, a basket of most beautiful Bartlett pears.

From Wm. B. Roberts, gardener to Samuel G. Perkins, Esq. of Brookline, a large and highly ornamented basket, containing black Hamburgh, Cape, St. Peters, Linfendal, white Muscat of Alexander, Golden Chasselas, common do. grapes; Admirable, Jaune, Belle, Chevreuse, Morris's white early Admirable, Pine apple, Clingstones.

From Hon. H. A. S. Dearborn, President of the Mass. Hort. Society, Roxbury, two baskets of red Roman nectarines, one do. containing Drap d'Or, and late blue French plums, one do. Cantaleupe melons, Trowbridge apples, Maria Louisa pears, Beurre Anglerterre do. Sickle do. some of them very beautiful.

From the garden of the Hon. T. H. Perkins, by W. H. Cowing, white Hambro-Muscat of Lunel Frankendale, Royal Muscat of Alexandria, flame colored Tokay, black Frontignac, Melacaton (native), white peaches from the wall, Bromfield nectarine. American, all remarkably fine specimens and some uncommonly splendid.

The address was delivered by the Hon. A. H. Everett, and at three o'clock, the members sat down to dinner "with numbers of respectable guests;" we remarked amongst other names, that of the Hon. W. Goldsborough of Maryland. Some of the toasts were too good to be passed over. We accordingly select a few.

Cultivators and Conquerors. The former would make the whole world a garden, the latter would convert the "Great Globe" to a Golgotha.

Let the Trumpet of Fame
Resound with the name
And deeds of the Tiller,
But blast the Mankiller.

Manual Labor Schools. Success to those literary and scientific establishments, which, by mixing corporeal with intellectual exertions, set the seal on that true greatness, which consists of a union of the most estimable qualities of body and mind.

Nullification. A Passion flower, planted in a hot house, propagated by artificial heat, and matured by fermenting substances. Let us hope that the process of division may not change it into a "Tremella noster," or the "fallen Star."

Office seekers for Office sake. Parasitic plants, Creepers into party, Climbers into popularity, and Twiners into power; a Tribe, sometimes very ornamental to the people, always useful—to THEMSELVES.

The Veterans of '76. A few slips of the Elder, grafted on the tree of Liberty. Their upright shoots, did not need much training, to produce a collection of SCARLET RUNNERS.

Ireland the land of the Potato. The Root is finely formed by Nature, but does not thrive by being forced. If an Irishman is not allowed to eat his Potatoes in peace at home, is it a wonder if he is not *mealy mouthed* abroad?

The Michael and Imperial Pear of Portugal. Both called Royal, but as Good Christians, we declare that they are neither of them worth a half a crown.

The Gardener. His wealth will be found to lie in his bed, provided he does not lie there too long himself.

Gold Mins. With a spade, a hoe, and active industry, every cultivator will find one in his kitchen garden.

Women, sweet herbs. In the summer of our existence, aromatic as the *Rosemary*; in the autumn, grateful as the *Lavender*; in the winter, balsamic as the *Sage*—May the seasoning of domestic life never be mixed with the sauce.

By Grant Thorburn, of New York. **Bachelors**—These sleepy Adams in the American gardens—May they awake like their grandfather—see Genesis 2nd chap. from the 21st to the 25th verse.

The Original Laurie Todd. The Veteran Horticulturist and Seed-man, that commenced his career with two Geraniums, in green printed pots."

We learn from a notice in the same paper from which we have extracted the above fragments, that the Agricultural Society of Massachusetts were to hold an Exhibition at Brighton on the 16th inst. when an address was to be delivered by the Hon. Edward Everett. May full success crown the honest efforts and patriotic labors of these spirited and active associations.

FINE FRUIT.

The Horticulturists of Virginia are beginning to pay more attention to their fruits. We have seen as fine Pippins from the Green Mountain as ever we received from New York. And the peaches, with which our market was supplied during the present summer by Doctor Barrett's Orchard, in King William, were of very superior quality. We have also eat some of the largest and finest Vergalieu Pear, we ever beheld, which grew within six miles of this city. Some of the finest species of Pears which are grown among us, reward in a very short time the care of the cultivator. They begin to bear fruit at the end of four or five years only, and when the trees are but mere twigs. We have seen, for instance, two small trees of the fine Seckel Pear, not more than five feet high, which were during the present year filled with fruit. They are of a rich brown red complexion, and they sometimes grow in bunches upon the twigs.

But it must be confessed, that more care and attention are still wanting to the cultivation of fruit in Virginia. No one can visit the Philadelphia market, without being struck with the superiority of their pears and peaches.

We have now before us a mammoth apple of the Pippin species, which was grown in the garden of Mr. Riddle, at Newcastle, in the State of Delaware. It weighs two and a quarter pounds, and measures sixteen inches in circumference. The same gentleman presented the other day to the President a peach weighing one pound and a quarter. The peach, which is described in the last Salem Gazette, as growing in that town, so fine, which weighed half a pound, and measured nine inches and three-quarters, is, consequently, very diminutive in proportion to the Newcastle production.

A friend, who left Philadelphia on Saturday last, informs us that he visited its market, "so famed for good fruit of every description, and although told that the season had passed for the best pears and peaches, yet he was amply repaid for the early walk. The pears were delicious. The butter pear is a large golden fruit, of fine odor and excellent taste—but the seckle pear is much the best. They are generally small, but he purchased some almost as large as his fist—the most delicious he ever tasted, and some of them so soft as hardly to be able to bear their own weight, even while perfectly sound. The peaches were very fine, even now; but are not so remarkable. He made inquiry of some one who could give him correct information as to the best mode of rearing the peach tree, and was introduced to a sensible Jersey citizen, who confirmed the accounts he had previously received—that

a peach orchard is not expected to bear more than three years, or four at most. The worms are at work upon them during that time, but do not succeed in destroying the trees, till after they have borne three or four years. Those who derive their income from fruit, (and they make from three to six thousand dollars a year from their best orchards,) have three or four fields, sometimes more, in order to keep up a perpetual succession. He enquired if there was no mode discovered of destroying the worms; but was answered in the negative; though great advantages are said to result from attention to the trees. The roots should be exposed in the latter part of autumn, and shell lime put around them; the knife should also be used in cutting out as many of the worms in the early spring as possible—one man can examine from fifty to one hundred trees a day. But with all this attention, the orchard is not expected to produce good fruit for more than four years.—It is generally believed, that if hogs are suffered to run at large in the orchard, or if the trees in the garden or yard are paved round, the *Cureulio* (the insect which produces the worm) will be arrested in its ravages.—*Richmond Enquirer*.

CHINESE MULBERRY.—*Morus Multiculis*.

This plant, independent of its great value for the feeding of silk worms, is very much admired as an ornamental tree. The large and silky appearance of its foliage affords a pleasing contrast with that of most other trees. In the vicinity of Boston, there are, we understand, quite a number of considerable size. They are of very luxuriant growth, and propagated with much ease, and with great multiplicity. As far as experiments have been made, they are equal, if not superior to the white mulberry, in the quantity and quality of the cocoons; and in abundance of foliage they are decidedly preferable.

RURAL ECONOMY.

FATTENING CATTLE.

As many farmers depend much upon the sale of fat cattle, for the successful prosecution of their business, it becomes an important question with them, how the greatest amount of fat may be put on an animal at the least expense. That many erroneous opinions prevail upon this subject is evident from the fact, that while many farmers raise and sell beef cattle, so as to afford a handsome profit, others are obliged to give it up as a *bad business*. It is generally admitted that nothing can be made by fattening cattle on Indian corn. We believe true economy requires it should be done chiefly on grass, or other green food, and roots. Beef fattened in this way will not be so firm or of so good quality as when fed with corn; but the difference in the market price does not compare with the difference in the expense of feeding. There is no doubt that pumpkins may be profitably fed to fattening cattle—but more profitably to milk cows. Potatoes, turnips, ruta baga, and mangel wurzel, are the roots on which the farmer should chiefly depend for fattening beef, in order to render the business at all profitable; and we believe, with a proper use of these, it may be made the best part of the farmer's business. Ruta baga is, in our opinion, a more profitable crop than either of the others mentioned; though we doubt whether a given quantity will go as far in fattening beef as the same quantity of potatoes. An animal put into the stall and fed on potatoes, with hay and a little salt, without any water, will perhaps fatten as well as in any other way. They should, we are confident, have no water when fed chiefly on potatoes, whether confined to the stall or the yard. We put up a cow on the fifteenth of November, which had been milked until the first of October, and was in no more than common store order. She was fed with from three pecks to a bushel of potatoes a day, kept clean and rubbed often with the

card. She was kept till she had consumed thirty bushels of potatoes, and did not leave the stall till led out by the butcher. She was lightly tallowed, but the beef was of the first quality. When put up she would not sell for over \$16, and when killed was worth to the consumer \$31. We believe that the *Long John* potatoes may be raised in common seasons at an expense to the farmer of not over six cents per bushel—consequently those fed to the above cow did not cost the grower over \$1.80; which, with hay and salt, might bring the cost of feeding, aside of labor, to three or four dollars. The expense of feeding on grain of any kind must have been much more, though the quantity of tallow would have been greater. A custom prevails in France of feeding cattle, for a short time previous to slaughtering, upon a kind of sour food, prepared by making a thick paste of rye meal and water, letting it stand till it ferments and becomes sour, then diluting with water and adding a quantity of cut hay. Cattle are said to thrive remarkably on this mixture, though if kept upon it too long, it impairs their digestion and destroys their appetite.

Farmer's Journal.

FATTENING HOGS.—A popular work on agriculture says, "The business of fattening hogs is usually performed from the commencement of October. Some farmers, and those who understand their true interests, commence somewhat earlier. The beginning of September, however, is sufficiently early to make them fat, provided they be of proper breed, before the weather becomes extremely cold." We wish farmers would ponder upon the propriety of this course. We believe very much is lost by neglecting to fatten hogs while the weather is best fitted for the business. In severe cold weather, hogs cannot be expected to fatten as fast as while it is warmer.—*Id.*

(From the New York Farmer.)

SALTPETRE IN MEAT.

It is a matter of regret that while so much salt meat is made and used, we have not yet acquired the proper knowledge of the best mode to prepare and preserve it; nor is it generally known how noxious salt meat may become by an improper use of saltpetre in the pickle or brine usually employed.

There are various modes of preserving salt meat and fish, by drying, salting, pickling, oiling, smoking, &c., but I merely mean at present to notice some of the defects and noxious properties of our actual salt meat, either beef or pork.

One of the main defects appear to consist in the useless addition of saltpetre into the pickle, whereby the meat often becomes sour or spoiled, and always acid and pernicious. I never could understand why this substance was added to common salt in curing meat, except that it is said to make it look better. But it ought to be known that the part of saltpetre absorbed by the meat is *nitric acid* or *aqua fortis*, a *deadly poison*! whereby our salt meat becomes unpalatable and pernicious. A slight excess of this acid makes the meat sour, or spoils it as we say. It has been suggested to correct this by potash, which re-absorbs this excess; but merely hides the defect without neutralizing the whole poison.

Is it not surprising that we should feed and deal, as a staple of our country, with an article containing a portion of such active poison as *nitric acid*? In fact, our actual salt meats are *no longer meat*! They are a new pernicious substance, produced by a chemical action of salt upon the flesh of animals. This flesh when fresh and clean consists chiefly of *gelatine* and *fibrine*. Gelatine or jelly is the substance soluble in warm water, forming a broth by boiling, or becoming a jelly by concentration; while fibrine is the fibrous tough part of the meat, which cannot be dissolved, and is therefore unfit for food, while gelatine is the real nutritious part of the meat.

But it is well known that salt meat and even corned beef can no longer afford a broth, and therefore gelatine must have been changed into another substance no longer soluble, nor so nutritious, by the chemical action of salt and saltpetre. To this new substance chemists have as yet not given a name; but is as different from from meat as leather is from the hide before it is tanned by the tan-bark or *tannin*.

To this chemical change in meat is to be ascribed all the noxious qualities of salt meat, and the diseases to which those who feed chiefly on it become liable,—sea scurvy, land scurvy, sore gums, rotten teeth, piles, ulcers, &c.—which we entail on ourselves by using a kind of poisoned bad meat, which we call salt.

This important and doleful fact ought to be well known, or made known generally to all those who raise cattle, cure meat, or eat it in order that they may correct this sad defect.

The first thing to be done is to abandon altogether the use of saltpetre in curing meat. This is indispensable, and no one who is told that aquafortis is the produce of it, ought any longer to use this poison in pickles or brines.

The best substitute for it is *sugar*: a small quantity added makes the meat healthier, sweeter, nicer, and equally durable. Let this be known to all our farmers and sailors.

How to make a brine for meat perfectly innocuous is yet a desideratum. Gelatine ought to be preserved in salt meat perfectly pure and soluble, as it is in broth cakes, before any salt meat can be perfectly healthy and equal to fresh meat. But at any rate, by withholding the saltpetre, we divest it of a deadly poisonous substance.

Yours, &c.

C. S. RAFINESQUE,

Prof. Hist. and Nat. Sciences,

Elm Place, Lansingburgh, N. Y. Aug. 5, 1833.

Messrs. Editors.—It is with no small degree of surprise that I observed in your paper, a communication from Professor Rafinesque, in which the use of Saltpetre, for the purpose of preserving meat, is condemned in the strongest terms. A communication from such a source will be received by a great mass of the community as fact, without inquiring whether it be so or not; and as the article in question is most palpably erroneous, I feel it to be due to the public that its errors should be exposed. In the first place, it is stated that "the part of saltpetre absorbed by the meat is nitric acid, or aquafortis, a deadly poison," than which nothing can be more erroneous. If Prof. R. can decompose nitrate of potassa (saltpetre or nitre) by means of animal muscle, he has gone one step further in chemistry than any other person. On the same principle may we say that common salt is decomposed, and that the part which enters the meat is muriatic acid, as powerful a poison nearly as aquafortis. Mr. Rafinesque states that he "never could understand why this substance was added to common salt in curing meat, except that it is said to make it look better."—As this is not the object of the nitre, I will briefly state its use. By the addition of a small quantity of it, the meat is prevented from absorbing a far greater amount of common salt, while, at the same time, it is equally as liable to "keep," and in consequence of this diminished quantity of salt, the meat is rendered more tender, and retains its original sweetness to a far greater degree than it otherwise would. I would not, however, recommend a large quantity of saltpetre, as it would thus prove injurious instead of beneficial. About four ounces to every 100 lbs. of meat will be amply sufficient. At the same time a small quantity of refined sugar will materially add to its sweetness.

The very respectable source of the communication referred to above has induced me to be somewhat more lengthy in my remarks than I otherwise would have been, but I trust that the importance of the subject will be a sufficient apology.

Yours, &c.

MEDICUS.

(From the Maine Farmer.)

BEES.

There is no production, considering its value, obtained with so little care and manual labor of the farmer, as honey; and yet not one farmer in ten keeps bees. The man who first discovered the plan of making the Bee work for him, and converted its labors into a source of profitable income, is worthy the highest honors. The method of keeping bees in rooms or garrets prepared on purpose for them, is a great improvement. These rooms should be so tight that rats, mice and other vermin cannot get to them; and they should be dark, for if there is a window the bees fly to that, instead of going to the apertures made for them to pass in and out. Bees managed in this manner never swarm, and you may take from them such quantities of honey as you like. Our climate is peculiarly well suited to bees, and there is one great advantage which we at present possess over farmers in Massachusetts and those further South. We have not yet been troubled with the Beemoth or miller, which is an insect that creeps into hives, and lays its eggs there in the night. These eggs produce a worm which destroys the bees and honey. This insect is a severe scourge wherever it appears among the hives, and we should watch carefully and not permit him to become a settler among us.

Bees when kept in common hives, may be made more profitable in one point of view than when kept in rooms. The sale of hives will amount to a considerable sum in the course of a few years, if no accident befalls them. Let us go into a little calculation on the subject.

PROFITS OF BEES.

One hive of bees, allowing them to swarm once per season, and each swarm to swarm once per season, beginning when it is a year old, will produce in six years, sixty-four swarms, each swarm ought to be worth \$5, which would amount to \$320. Now supposing you had your hives constructed on Mrs. Griffiths's plan, with a top to take off, and each hive yielded 25 lbs. of Honey worth nine-pence per pound, then the 1st year from 2 hives, counting the 1st swarm you would have 50lbs. worth

2 year from 4 hives, 100 "	\$ 6.25
" " 8 " 200 "	12.50
4 " " 16 " 400 "	50.00
5 " " 32 " 800 "	100.00
6 " " 64 " 1600 "	200.00

Value of hives, 320 00

713 75

If you begin with four hives with like success, cost of four hives, 0 00
six years interest, 7.20

Income. 2827.30

Much care would be necessary to protect them during the winter from the cold, and the mice, and also to cultivate plenty of Buckwheat, mignonette, &c. &c for their food.

GAMA GRASS.—We have received from Mr. Z. Drummond, a few seeds of Gama Grass found on his plantation in Amherst county. He says the stalk is as large as his finger and eight feet high—blade, three inches wide.—*Lynchburg Virginian.*

There were six thousand four hundred and eighty-two hogheads of tobacco inspected in Petersburg during the year ending the 30th September last—being an increase of 1520 blds. over the preceding year.—The increase is attributable, doubtless, to the greater facilities of transportation now enjoyed by that town, consequent upon the completion of its railroad.—*Id.*

MISCELLANEOUS.

LAFAYETTE COLLEGE.

SIR:

Easton, Pa. October 9, 1833.

I was pleased to see, in your last number, an account of the Agricultural School, established through the liberality and public spirit of certain members of the Protestant Episcopal Church, near Bristol, in this state; which I find is essentially modelled, as to the course of labor and study, after Lafayette College in this place, which again may be considered as a continuation of the Manual Labor Academy of Pennsylvania, formerly located at Germantown, near Philadelphia, first under the care of Mr. Monteith and subsequently under that of Mr. (now Dr.) Junkin, the President of our College. I beg leave to send you herewith a copy of our first annual Report, published twelve months since, and will send you shortly a copy of our second annual Report, read on the seventh inst., and which is now in the printer's hands.

We think we have given the Manual Labor system a fair trial, even under the disadvantages we have had to encounter, in starting without any endowment. We combine manual mechanical labor with agricultural labor, and we require every youth, without regard to his pecuniary circumstances, to labor three hours per day at labor which will give him exercise—the avails of which are deducted from the expense of his boarding and tuition.

We have now in occupation a farm of between sixty and seventy acres, nearly adjoining our borough on the south, the work on which is entirely done by the students, under the direction of Mr. Thomas Pollock, a practical farmer. We are erecting a new College edifice, on premises purchased directly north of the borough, on a beautiful and commanding eminence which overlooks the town, the junction of the rivers Delaware and Lehigh, the outlets and inlets of the Lehigh, Delaware and Morris Canals, with their locks and inclined plane; and yet the building itself stands on a plane of fine fertile limestone land, of the very best kind and quality for our agricultural and horticultural operations. There, on the first of April next, we calculate to be located, with all our students, and with accommodations for as many more as we now can take. The new building will provide for one hundred and six, and there, being the owners of the fee, we can proceed to put our land and grounds in order for permanent operations; planting nurseries and commencing systematically our flower and vegetable gardens, and so occupying the ground we have, with what we shall add to it, as to carry on the whole course of farming, or husbandry, in all its branches and details, as practised by good practical farmers.

Part of the mechanical labor done by the students during the last six months, has been the planing, ploughing and tonguing the floor boards for the new College, the principal part of which are now in order for being laid,—and in making the sash for the windows—one hundred and thirty in number—they have, besides this, made a large number of packing boxes for the Philadelphia merchants, for which they find ready sale, paying them a fair price for their labor.—They also manufacture ploughs, harrows and cultivators. The details will appear in the tabular statement annexed to our second annual report, now publishing, (or, as our friend Chandler would have it, "being published.")

We feel assured that, the buildings and farm being furnished, the Institution can maintain itself, compensating the most competent teachers for instructing the students in all the various branches, from that of common elementary instruction to the most finished collegiate education.

Our Institution has been chartered by the Legislature, with power "to grant such degrees in the liberal arts and sciences, or such branches thereof, to such students of the College, or others, who by their pro-

ficiency in learning or other meritorious distinction, they shall think entitled to them, as have been usually granted in other colleges or universities, or which the said Trustees shall think right and proper," &c. And in exercising the power thus committed to us, we mean to establish branch degrees, for separate branches of science and education, corresponding with the studies and acquirements of students; and not the least important of these will be, the diploma, or certificate of qualification, for teachers of common or elementary schools.

We have another provision in our Charter, to remove the fears of all such as might be apprehensive of the Institution ever becoming the subject of sectarian influence. It is this—"Persons of every religious denomination shall be capable of being elected trustees, nor shall any person, either as principal, professor, tutor or pupil, be refused admittance into said college, or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion."

Filling the situation of President of the Board of Trustees, my attention has necessarily been a good deal directed to the operations of the Institution; and my original impressions of the system being the best one that has yet been presented for the education of the youth of our country, has been fully confirmed and strengthened, if possible, by each day's experience.

Very truly, yours, &c. J. M. PORTER.

L. Irwin Hitchcock.

SOMETHING NEW.—An agricultural friend has related to us the following: He has observed, for some weeks, that two of his cows gave but very small quantities of milk in the mornings. At night they gave the usual quantity, but in the morning, it was not unfrequent for them to withhold it altogether. He could not account for it, but was satisfied they must have been milked, yet, with all his precaution, he could not discover the offender. Yet the evil continued, until a few days since, when it was discovered that a couple of good sized hogs were stationed, one on each side of the cows, "playing the part of the calf," with a good share of self-complacency. The cows and hogs had been kept at night in the barnyard together; and it appeared that the quaters had so far ingratiated themselves into the good graces of the cows as thus to be indulged with the first milking.

[*Auburn Journal.*]

HOW TO CATCH CROWS.—Wilson, in his American Ornithology, says that crows have been employed to catch crows, by the following stratagem:—A live crow is pinned by the wings down to the ground on its back, by the means of two sharp forked sticks. Thus situated, his cries are loud and incessant, particularly if any other crows are within view. These sweeping down about him, are instantly grappled and held fast by the prostrate prisoner, with the same instinctive impulse that urges a drowning man to grasp at every thing within his reach. The game being disengaged from his clutches, the trap is again ready for another experiment, and by pinning down each captive successively, as soon as taken, in a short time you will probably have a large flock screaming about you, in concert with the outrageous prisoners below. This method of catching crows is, I believe, practised in some parts of England to catch jays, who make a most violent outcry when pinned to the ground.

Mr. Benjamin Johnson, a farmer near Peterborough, England, having a field of beans which had a considerable quantity of chickweed and groundsel, turned in a flock of ewes and lambs to eat the weeds. In a short time the shepherd observed thirty of the flock to drop suddenly. On examination, it was discovered that seven were actually dead. Medicine was administered to the others, and they were saved. It was found that eating voraciously produced suffocation, by which the whole flock were in some degree affected.

Prices Current in New York, October 12.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .16 a 18; Upland, .15 a .17; Alabama, .15 a .18. Cotton Bagging, Hemp, yd. 20 a .22; Flax, .18 a .19. Flax, American, 20 a 22. Flaxseed, 7 bush clean, — a —; rough, 11.50 a 12.00; Flour, N. York, bbl. 5.50 a 5.62½; Canal, 5.62 a 5.81; Balt. How'd'st. 6.50 a —; Rh'd city mills, 6.75 a 7.00; country, 5.75 a 6.00; Alexandria, 6.00 a 6.25; Frederick-burg, 5.75 a —; Petersburg, 6.00 a 6.25; Rye Flour, 3.75 a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —; Grain, Wheat, North, — a —; Vir. 1.16 a —; Rye, North, .80 a —; Corn, Yel. North, .78 a —. Barley, .72 a —; Oats, South and North, .35 a 40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 8.00 a 10.00; Provisions, Beef, mess, 10.00 a 10.50; prime, 6.44 a 6.50; cargo, 6.50 a —; Pork, mess, bbl. 16.75 a 17.00; prime, 11.75 a 12.00; Lard, .9 a .10½.

BAKEWELL RAM.

I have the disposal of one of these fine animals, from Mr. Barney's flock—yearled last spring. Price \$75. Who will have him? I. I. HITCHCOCK, American Farmer Establishment.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect. Price \$350. Address I. I. HITCHCOCK, American Farmer Establishment.

GRASS SEEDS.

Perennial rye grass, at \$1 a bushel.
Poa pretensis (fuztop) for lawns, at 25 cts a quart.
Tall Meadow Oat Grass at \$2 50 a bushel.
Orchard Grass at \$3.00 do
For sale at this Establishment, by
I. I. HITCHCOCK.

DOGS.

Two fine young pointers of excellent blood, about four months old, for sale at \$10 each, also
Two female pups, from my greyhound slut, (lately presented by the President of the United States.)—They are, however, only half blooded, having been gotten on board the vessel, in which the greyhounds were imported, by some other of the fine dogs which accompanied them. These pups are truly beautiful, appearing like full bred greyhounds. They are now about three months old. Price \$10, each.
I. I. HITCHCOCK.

DEVON AND SHORTHORN CATTLE, and other Superior Stock, for sale

To be sold, at the Three Tuns tavern, on Saturday, the 16th day of November, at 12 o'clock, a variety of Cattle, of the Devon and Shorthorn breeds; of pure blood, and superior in quality, consisting of
1 Devon bull, 4 years old.
4 do 2½ years old.
2 bulls, half Devon and half Shorthorn, one 2½ years old, the other 1½ year.
3 Devon heifers, 18 months old.
3 Devon bulls, 15 to 18 months old.
4 Devon heifers, with bull calves, from a Shorthorn bull.
4 bull calves, half Devon half Shorthorn.
The famous bull Teumisch, is the sire of all the above Shorthorn offspring.
6 Devon cows, in calf by a Devon bull.
6 rams, of the Bakewell and Southdown blood—the Bakewells are of the stock of Mr. Barney.
1 colt, of very fine promise, 2 years old in June, upwards of sixteen hands high—from Mr. Willis' horse.
2 colts of the Tom breed, one 16 months old, the other, 2 years four months.
A Jack of the blood of the Knight of Malta, and the Royal Gift—about 13 hands high, and of very great bone; a fine foal getter.
A Mule, the colt of the above Jack, 14 months old.
The above stock has been raised on the estate of Brooklandwood, the residence of R. Caton. Apply to
EVAN HUGHES, Manager, or
H. W. BOOL, Auctioneer.
Baltimore, Oct. 18, 1833.—51.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to
I. I. HITCHCOCK,
Amer. Farmer Establishment.

MORUS MULTICAULIS,

(New Chinese Mulberry.)

Of this tree, unrivalled in its excellence for feeding silkworms—quick in its growth and hardy in its constitution; yielding far more nutriment for the worm in the same bulk than any other tree known, and making silk of a very superior quality—a full supply will be furnished at this establishment, at seventy-five cents each: seven trees (including packing) will be sent for \$5, and fifteen for \$10. The trees will be ready for delivery 1st of November.

I. I. HITCHCOCK,

American Farmer Establishment.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.
J. S. EASTMAN.

AGRICULTURAL IMPLEMENTS,

Seeds and Fruit Trees.

SINCLAIR & MOORE, corner of Pratt and Light streets, offer for sale a general assortment of the most approved kind of PLOUGHS of various sizes and patterns—both with wrought and cast shears—also, extra shears and heels to supply the demand for old Ploughs.

CYLINDRICAL STRAW CUTTERS of the following sizes and prices, viz.—11 inch box, \$27—14 inch do. \$45—16 inch \$55—20 inch do. \$75—this last size is a very powerful machine, and is adapted to horse or water power, but may be used advantageous by hand. The smallest size of these boxes will cut 300 bushels per day, the 14 inch box will cut about 700 bushels per day—also, common straw cutters at \$5 to \$7 50.

CORN SHELLERS with vertical wheels, the most durable and efficient kind—Lanes' Patent THRESHING MACHINE and HORSE POWERS—Improved WHEAT FANS, Harrows, Shovels, Spades, Mattocks, Picks, Brier Hooks, Cast Steel Axes of superior quality, &c. &c. Clover, Timothy, Orchard Grass, Herds Grass, Tall Meadow Oat Grass, Lucerne and White Clover Seeds.

FRUIT TREES, a great variety—Catalogues to be had at our store.

N. B. The inconvenience and expense of collecting small accounts at a distance has induced us to adopt as a general rule of business, that all small bills must be settled in cash or town acceptances on delivery of the articles—a discount in prices will be allowed for cash, where the articles purchased are of sufficient amount to be an object.

SWINE—BARNITZ BREED.

Several boars (but no sows) of this breed are now for sale at this establishment. They were farrowed August 19th, and are now ready for delivery, at \$5 each.

I. I. HITCHCOCK,

American Farmer Establishment.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 3 a 5.00; do 60 ground leaf, 5.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00—Virginia, 4 00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 253 hhd's. Maryland; 82 hhd's. Ohio, and 1 hhd. Kentucky.—total 336 hhd's.

FLOUR—Best white wheat family, 7.00 a 7.50; 2d quality, 6.50 a 7.00; super Howard street, 5.75 a 5.87½; (wagon price, 5.75, a —;) city mills, 5.75 a 5.87½; city mill, extra, 6.25 a —.—CORN MEAL, per 100 lbs. 1.50 a 1.56.—GRAIN, new red wheat, 1.13 a 1.16; white do 1.15 a 1.30.—CORN, white, 63 a 64; yellow, 66 a —; RYE, 69 a 70; chop rye, per 100 lbs. 1.50 a —.—OATS, 30 a —.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVER-SEED 5.50 a 6.50.—TIMOTHY, 3 00 a 3.50.—ORCHARD GRASS, 3.00 a —.—Tall Meadow Oat Grass 2.50 a —.—Herds', 1.25 a —.—Lucerne 37½ a —.—lb.—FLAXSEED, 1.37 a 1.50.—COTTON, Va. 15 a 16; Lou. 17 a 18; Alab. 16 a 17; Tenn. 15 a 16; Upland 16 a 17.—WHISKEY, hhd's. 1st p. 29 a 29½; in bbl's. 31½ a 32.—WOOL, W shed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 52 a 58; three quarters do. 47 a 52; half do. 42 a 47; quarter do. 37 a 42; common 37 a 42.—Unwashed, Prime or Saxony Fleece, 31 a 37; American Full Blood, 28 a 31; three quarters do. 25 a 28; half do. 24 a 27; quarter do. 24 a 25; common, 24 a 25.—HEMP, Russia, ton, \$170 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, — a 40.—Plaster Paris, per ton, 4.00 a —; ground, 1 37½ a —.—bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28 00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.50 a 5.00.—Oak wood, 3 00 a 3.75; Hickory, 4.25 a 4.75; Pine, 2.37½.

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FROM BALTIMORE.

BALTIMORE, FRIDAY, OCT. 25, 1833.

AMERICAN FARMER ESTABLISHMENT—AN INTEREST IN IT FOR SALE.—About the time the subscriber became sole proprietor of this paper in the spring of 1831, Mr. G. B. Smith, who then had charge of its editorial department, procured a small stock of garden seeds and commenced vending them, and also became agent for the purchase and sale of trees, plants, implements, cattle, &c. In the spring of 1832, the subscriber purchased from Mr. S. his stock of seeds and assumed the agency above mentioned. With a view to further improvement of the concern, Mr. Smith undertook the cultivation of a small farm and seed garden a few miles from town. In the following autumn, domestic affliction rendered it necessary that he should return to the city, and as the most eligible means of preventing loss, and securing to the establishment the advantages which were anticipated, the subscriber purchased Mr. Smith's property in and on the farm, and thus became the proprietor and director of the entire establishment.

So unexpectedly rapid has been the increase of business in all parts of the concern since its commencement, that the subscriber finds himself absolutely unable to perform, as they ought to be performed, all the duties that thus devolve upon him. Under these circumstances he is induced, though very reluctantly, to offer for sale an interest in the concern, not exceeding one-half, well knowing the superiority for efficiency in business of a proprietor over hired assistance, however capable and well disposed. The subscriber will, therefore, be glad to receive proposals from any gentleman disposed to unite with him, and will answer promptly any communications that may be addressed to him (post paid) on this subject. It may be proper to add that the employment will require industry and activity in some (almost any) department of the establishment, and a capital of from \$5,000 to \$10,000.

I. I. HITCHCOCK.

EDITORIAL COURSE.—The task of catering for the readers of the American Farmer at the present day is evidently a far more difficult one than it was fourteen years ago. Then an agricultural paper was a new thing, and it was therefore, almost certain to please its readers, even if it had had no higher claims to their approbation. But this was not all—the novelty of the enterprise excited the curiosity and the ambition of farmers and hundreds of the ablest men in the country snatched their pens and made ample contributions to its columns, of the most valuable matter. This rendered the paper as truly excellent as could be desired and what at first captivated by its novelty soon secured unanimous approbation by its evident utility, and one burst of applause from the planter, the farmer, and more than all, from the press, soon stamped the enterprise with complete success—it was a decided *hit*. The farmers were delighted, because they were greatly benefitted by the publication, the editor was equally gratified, because he was both praised and paid as he well deserved—and the very essence of a good bargain was well illustrated, for both parties were gainers. In our free country, however, success in every new scheme, is certain to raise competition, and so it happened in this case. The New England Farmer appeared and succeeded. This made a serious inroad upon both the patronage and contributions of the American Farmer, but the spirit of inquiry which had been roused by the latter, among farmers regarding their avocation, soon supplied the new paper with a liberal support, without apparently diminishing that of the old one. Presently the Southern Agriculturist reared its head, and found, and we presume still finds,

ample support. In short, agricultural journals have increased in all parts of our country, till they are now as thick as blackberries. Under the circumstances, it cannot be expected that any one will engross nearly all, nor more than its due share, according to its merits of public patronage. There doubtless is, and has been from the commencement of the American Farmer, a steady increase in the total amount of money paid, and of excellent matter written for agricultural papers in the United States, as well as in the number of readers of them; but the money and the matter are divided among many, which still requires as much of each to carry on a paper now as it did then. What then is the proper course for an editor to pursue, at the present day?—We have said that the quantity of instructive matter written for the agricultural press in the United States, is probably greater now than it was twelve or fourteen years ago. Is it the worse for having been printed a week or a month in some periodical? Would it have been more instructive or valuable to a reader of this paper, if it had been written or communicated expressly "for the American Farmer," than it is coming from some other periodical or book? We think not, and expect our readers will agree with us on this point. We shall therefore avail ourselves of the use of such writings, not as a measure of necessity merely, but as one of eligibility. Good, useful and instructive matter, theoretical and practical, is what we shall endeavor to provide for our readers—and there is no scarcity of such—without being very solicitous whether it was written this week or last year, or whether it has already been read by ourselves only, or by ten thousand others. In the community of agricultural papers, however, we should be ashamed of not furnishing our share of original matter—we shall endeavor to do so, and to this end, earnestly invite our subscribers and other friends to favor us with communications for our columns.

We have recently received a considerable accession to our library of valuable agricultural works, both American and European, from which, as well as from the periodicals of the day, we shall occasionally draw for our columns. We shall also, rather more frequently than heretofore "cast our mite into the treasury," in promotion of the two great national objects which are happily engrossing more and more the public attention, as their importance to our republic is becoming daily more apparent—we mean internal improvements of our country, and rational education of our youth—that is practical education in the business and pursuits of life as distinguished from mere word education. We repeat that we shall be much gratified by receiving hints from our subscribers and others concerning **CULTURE** of any and of every kind.

LARGE BEETS.—We perceive that our friend of the New-England Farmer, has received from some of his patrons, what he calls "a beet and a beater," the latter (and larger) weighing 74 lbs. and he considers himself "supplied with beets." Doubtless these are "pretty considerable" roots, but they are no touch to Maryland productions. Our friend, Henry Thompson, Esq., has sent us two, which measure and weigh as follows, and he assures us they are not more remarkable than many others of his present crop—viz: One is 18 inches long and 18 inches in circumference, weight 103 lbs. The other, 2 feet long and 18 inches in circumference, weight, 123 lbs. The tops are large and very luxuriant. These we call fine specimens. Some of our friends however, have sneered at them, saying that "their size is by no means uncommon or remarkable for Mangold Wurzel." Indeed! Then why not cultivate Mangold Wurzel more plentifully, since it is neither "uncommon" nor "remarkable" for it to attain so high a degree of perfection? We just hint to our readers, that though we are not desirous of being beaten ourselves, nor yet of beating the gentleman who sent us the roots in question, we should be glad to receive

from some of them an article of the same kind that will exceed these in weight or measurement.

MR. EDITOR.—Why is BARLEY so little cultivated? Can you not give through the medium of your paper, some account of its culture, &c.? Such information would be useful to many; amongst others, to your obdt. servt.

MALT.

[We will feel indebted to any of our subscribers or correspondents who have experience, for their ideas on this subject. In the mean time we will bear in mind the request of our friend above, for whom we entertain a particular regard.—*Ed. Am. Far.*]

DEVON AND SHORT HORN CATTLE.

To the Editor of the American Farmer:

SIR:—A correspondent enquires of you the comparative merits of the Devon and Short-horn breed of cattle. The merits of both are great, but very different in their nature; the Short-horn, are deep milkers on good pastures of a long rich bite, they keep in good order. When giving milk, they are lean—and they have tender constitutions. In weight, they acquire a rapid increase, when well fed—if not well fed, they rapidly fall off—for the Valley of the West, they would be perhaps more profitable than any other stock. Where milk alone is an object, they will yield in proportion to the food supplied, according to its quality; but they must be sustained abundantly.

The Devons are small in size; six hundred is a good weight for an ox. Yet in New England, they have attained a weight of fourteen hundred. This was by forcing, and not by ordinary feed. They yield rather a small supply of milk; four to five quarts at a milking, may be deemed a good average for thirty weeks in a year. But their milk is deeply colored and rich, and yields more butter than any other breed of cattle, in proportion to quantity. I think any given number of acres of grass, will yield, when fed off by Devons, more butter than when eaten by any other breed. The Devons have many parts unrivalled—they are more hardy—more readily acquire fat—are more gentle and docile as oxen, and more capable of active motion, than any other known breed. When reduced by labor, they are restored in two or three weeks to good condition. In addition, they are the most beautiful of cattle, and their flesh is of the finest grain. I have been of opinion that a mixture of the two breeds, would improve each other. The Devons would give constitution to the Short-horn, and the Short-horn would increase the size of the Devon, and add to its yield in milk.—These conclusions are not always realized, but very often they are; for I have often found in breeding, that animals are improved by mixing decided points of excellence. But the breeder must take care not to make the experiment where either party has a radical defect—for inferiority is more readily propagated than excellence.

A PRACTICAL FARMER.

Oct. 19, 1833.

By the latest arrivals from Liverpool, it seems that the cotton market was (Sept. 16th.) very dull, and prices had somewhat declined. "At Havre," says the account, "prices were reduced about 1d. a pound."

NEW YORK CATTLE MARKET.

Monday, Oct. 21st.—At market 1,100 beef cattle, 29 cows and calves, 3,600 sheep and lambs, 160 swine.

Prices.—In consequence of the unfavourable state of the weather there were few buyers—sales were dull and prices depressed. Prime cattle sold at \$6.50; good do. from 5.75 a 6.25. inferior do. from 5 a 5.50; average price, according to quality, \$5.87½.

Cows and calves—A few were sold at \$18, 22, 26 and 27 each.

Sheep and lambs were equally dull of sale, only 1,400 being sold. Sheep brought \$2.75, 3 and 3.75. Lambs from \$1.50, 2 and 2.25.

AGRICULTURE.

(From Nicholson's Farmer's Assistant.)

MANURES.

(Concluded from page 252.)

Pigeons' dung, which is chiefly calcareous matter, is found very efficacious, when powdered, and a slight quantity applied to lands; while, at the same time, too much will prove hurtful at first. The dung of other fowls is very similar, though some more and some less efficacious.

We must also notice human ordure, which is capable of being converted into a very powerful manure, after being mixed with suitable earths, and having a due length of time to prepare it in a compost of suitable earths, &c. It requires two years to bring it to perfection.

Barilla is highly valuable, as a manure. Old woolen rags are also very good. A piece, of the size of a man's hand, will serve to manure a hill of potatoes, when properly buried in the soil beneath the growing plants.

We will now speak of another calcareous earth which, in this country, is commonly entitled to the highest consideration, as a cheap and valuable manure, and this is gypsum.

"One hundred parts of gypsum," says Mr. Chaptal, "contain thirty of sulphuric acid, thirty-two of pure earth, and thirty-eight of water." "If it be kept in a fire of considerable intensity, in contact with powder of charcoal, the acid is decomposed, and the residue is lime."

"Gypsum is found in the earth in four different states: 1, in the pulverulent and friable form, which constitutes gypseous earth, fossil flour, &c.; 2, in solid masses, which constitute plaster stone; 3, in stalactites; and, 4, in determinate crystals of different forms."

"The color of gypsum," he adds, "is subject to a great number of varieties, which are the signs of various qualities, relative to its uses. The white is the most beautiful; but sometimes it is gray, and in this case it is less esteemed, and less valuable. The several states of the oxide of iron, with which it abounds, in greater or less quantities, constitute its rose-colored, red, and black varieties."

For almost all soils, except clays and wet loams, this is the cheapest manure that can be applied; and its use in this country serves greatly to equalize the value of lands, by rendering those which are naturally poor almost as productive as the rich.

The gypsum that abounds in the interior of the state of New York is much superior to that of Nova Scotia; not only as to its being a greater stimulant to the growth of plants, but in regard to its being more general in its operation, better calculated to assist the growth of all plants, in all soils and situations.

It has been successfully applied to old meadow-land of timothy grass; to growing crops of wheat, and on lands near the ocean; in all of which cases the Nova Scotia gypsum is usually applied with little or no effect.

In another instance, however, we have seen it inoperative on timothy grass, on a dry loam; while it had its usual effect on the clover growing on the same soil. Its effects are not always the same; but most certain when applied to clover, by greatly increasing that crop, and by putting the land in good condition for almost any other, when the clover-sward is turned under.

As gypsum, when sown on suitable grounds, always produces a spontaneous growth of white clover, and as this growth is an infallible indication of the soil being thus rendered in a good condition for a crop of wheat, or rye; where, therefore, either of these crops is to be raised on fallow grounds, the better way is to sow the gypsum early in the spring, and, as soon as the growth of this clover is produced, break up the soil, and prepare it for the crop, by further ploughings

in due season; and in this way the product will commonly be double what might be expected on the same ground, without the application of this manure.

Thus, suppose that the ground be a dry loam, or gravelly loam, so exhausted that ten bushels to the acre, of wheat could only be obtained by the common culture; let two bushels of gypsum to the acre be applied, early in the spring, and by the middle of June, or sooner in more southerly climates, the ground will be covered with a sward of white clover; and then, with the same culture, twenty bushels to the acre may be expected, and the ground will be in much better condition for another crop.

The same difference may be expected, where a crop of rye is to be raised, on ground suitable to its growth.

The most powerful operation of this manure, in proportion to the quantity used, is in applying it to dry the seeds, after being soaked in some fertilizing liquor, such as a mixture of old urine, ley of wood-ashes, or strong soap-suds, with a solution of saltpetre, and sown or planted immediately.

The effects of such treatment on seeds of Indian corn, buckwheat, peas, oats, barley, and perhaps flax, will probably be found the greatest; but, if the gypsum of the state of New York be used, perhaps its effects may be found more generally useful.

When potatoes are cut for planting, it is of singular use to the growth of the crop to sprinkle on gypsum, before the cut parts have dried; and also to apply some to the hills, before the seed is covered, about a table spoonful to each.

Indian corn is also greatly benefited by a similar application to the hills. Let the gypsum be scattered a little in both cases.

Its effects on pumpkins, squashes, and other plants of that sort, is said to be great; also, on cabbages, and probably on turnips of different kinds, as they are all different sorts of Brassica. Most probably, all plants will be more or less assisted, in their growth, by a proper application of gypsum.

Every farmer and planter ought to keep a constant supply of this excellent manure, if it can be obtained at any reasonable price, and his lands be more or less naturally sterile, or exhausted, and suitable for its application. He will find that, with proper management, every bushel he applies to his lands will yield him double, and from that even to tenfold, its value, according to his soil, the price gypsum costs him, and the uses to which he applies it.

Its application, together with the cultivation of red clover, and other suitable grasses, to almost all the dry lands of the Atlantic States, lying south of Pennsylvania, is a desideratum of the utmost importance to the planters of that naturally fine tract of country; a country not generally of a very strong durable soil, that has suffered much from the most exhausting crops, and the worst of husbandry; but is, nevertheless, susceptible of being made second to none in the United States, by a proper system of culture, with the aid of gypsum, and other suitable manures and grasses.

Generally speaking, little else but these are wanting to raise the value of the plantations of that country to five, and, in some instances, to ten times the amount of the prices they at present command.

Col. Taylor, of Virginia, from various trials of gypsum, draws the following conclusions: That this manure should be mixed with the earth, by harrowing or ploughing; that drought may defeat its operation on Indian corn, if the manure be not thus worked into the soil; and that its effects on this crop are as great in this way, as when applied to the hills; that it increases the fertilizing effects of coarse barn dung; that gypsum may greatly increase a crop of red clover, when sown even as late as May; that even a half bushel of this manure, to an acre, may often be found as efficient as a much larger quantity; that an excess of moisture, or of drought, commonly destroys its operation; that the state of the ground, or of the atmosphere, whether wet or dry, at the time of sowing this

manure, is not essential; but that the state of each, afterwards, is of particular consequence; that its effects are more likely to be defeated when sown on the ground, than when worked into it; that sowing it broadcast on Indian corn, after it is up, may improve the crop twenty-five per cent.; that, sown in June, it may improve English grass; that sown in August, and worked in, it may improve the ground; and that, sown in November, it will most probably neither assist the crop nor the land.

This, it must be remembered, is the Nova Scotia gypsum.

Mr. Peters says the foregoing very nearly agrees with his experience. He says he has always derived very beneficial effects, in raising every kind of grain, from first wetting his seed, and then rolling or drying it in gypsum, before sowing; but that he never experienced any benefit by sowing this manure on any kind of grain usually sown in the broadcast, except buckwheat.

He had probably never tried it on peas, and other leguminous crops.

He found it excellent for tobacco. He says it will not operate on an exhausted soil, that has become destitute of vegetable or petrescent animal matter—but that when either of these, or lime, is applied to such soil, then the gypsum, even if it has been lying in the soil without effect, will have its usual operation. At the same time, he says that lands newly cleared, which have commonly much animal and vegetable matter in them, are not assisted by this manure.

He also considers it as efficient as lime, for the purpose of expelling insects from the soil.

Acids applied to gypsum produce an effervescence; and this is, therefore, one method of distinguishing this manure from other kinds of limestone. Another is, to reduce the mass, supposed to be gypsum, to powder; then put it in a vessel over the fire; and if it be gypsum, an ebullition will take place, when the mass becomes sufficiently heated.

We have been informed, that gypsum has a most powerful effect, when applied as a manure to strawberry plants, by greatly increasing the size and quantity of the fruit. We believe that all leguminous plants, and all those which grow above ground, in the shape of vines, derive much benefit from this manure.

Mr. Livingston says, that in travelling through Flanders he found that pyrites were used as a manure, particularly for grass lands, at the rate of about six bushels to the acre. The seed grain is also covered with it, as it is with gypsum in this country. The stone is sufficiently impregnated with sulphur to burn, when dry, and this is the method there used to reduce it to powder. For this purpose, it is laid in heaps, and when it has become red with burning, the fire is extinguished; for if it burn longer it becomes black, and then the quality is not so good.

After the burning, it is easily reduced to powder; and as a proof of its great value, as a manure, he observes, it is carried forty and fifty miles into the country, on the backs of asses.

Mr. Livingston is of opinion that the sulphuric acid in this, as well as in gypsum, is the fertilizing principle; that in this slow combustion this acid is absorbed in the burnt earth, while the inflammable matter is dissipated; and that the union of the alkali and the acid forms a salt not unlike, in its chemical relation, to gypsum, or perhaps one that is more soluble, more impregnated with the acid.

Referring also to a circumstance mentioned by Duhamel, where this acid being scattered over weeds, with the view of destroying them, only made them grow with additional vigor, he observes, that probably if it were diluted and applied to the soil, or mixed with wood-ashes, and applied in that way, it might answer the purpose of gypsum. And in order to find an acid that would be cheaper and better, as, being already composed of a constituent part of vegetables, he observes that the pyro-ligneous acid may be obtained, at a trifling expense, by converting wood into charcoal,

and condensing the vapor; as the charcoal would of itself repay the expense of the operation, particularly where wood is cheap.

Mr. Livingston further observes, that he has seen pyrites on his own estate; and advises that experiments be made of this earth. It is to be laid in beds about four feet thick, and while burning should be stirred with a rake. When cooled, pound it fine and sift it. If the earth should prove too inflammable, he advises to give it a mixture of lime, which, by the process of burning, would be converted into gypsum; or wood-ashes would be found useful. If the pyrites be in lumps, it must be reduced to a coarse gravel, before burning.

A due attention to the recommendation of Mr. Livingston on this subject might be productive of very beneficial results, as no doubt many parts of the interior of this country may be found, abounding in pyrites which are destitute of gypsum.

Mr. Chapman, of Pennsylvania, tried sulphuret of barytes, calcined, as a manure, and found that it even exceeded gypsum in its effects, not only on dry gravelly lands, but also on clays. It drove insects from his garden. He considers it the most powerful manure ever yet discovered. Care must be taken, however, not to strew it on the growing plants, lest it kill them.

In preparing some, for the purpose of making an experiment, he took twenty-four pounds of this earth, mixed it with three pounds of powdered charcoal, and put the whole into an earthen jar, with a light cover thereon, and burned it in a potter's kiln.

Sulphur is also found to be nearly as efficacious, as a manure, as it is for expelling insects.

Pulverized stonecoal, says Mr. Muldenberg, is a good manure for most soils. Four hundred pounds are sufficient for an acre. Pulverized charcoal is also good; and the same may be said of pulverized slate, limestone, and shells of shellfish. The latter are also good to be ploughed in whole, in a dry soil, for the purpose of increasing its moisture.

Burnt clay, good for cold, stiff soils.

Every part of animal substances may be converted into good manure. The flesh, in decomposing, discloses abundance of azote and miasma; and some of the constituent parts of blood are alkaline and sea salts, oil, air, water, &c. all of which are essentially the food of plants. The bones, when powdered, are good as a top-dressing; and even the shavings of the horns, and of the hide when curried, are good in composts, or when buried in light soils. The flesh should be spread over the ground, and ploughed in immediately. The blood is best used in composts.

Of vegetable manures, those which are either ploughed down for green-dressings, or are otherwise buried in the earth while green, are much more efficacious than when dried, especially if long exposed to the weather.

Such may, however, be useful when brought into cow-yards, and there mixed with the dung of the cattle, by which means they absorb much of the stale and juices of the excrements, which would otherwise be lost. For this purpose, almost every kind of plant, whether green or dry, is more or less useful.

Of the contents of the barn-yard, horse dung is the worst, and sheep dung is much the best, as a manure. If the former be suffered to lie long in a heap, it will be spoiled by its own heat, which is to be known by its white mouldy appearance, and therefore should be applied to the soil as soon as possible. It is most suitable for cold, wet, and stiff soils; and the same may be observed of sheep dung, though this will greatly assist any soil. Cow dung is best for light or dry soils.

Every kind of barn dung is much injured by being suffered to lie exposed to the rains; and therefore should be kept as much under cover as possible. It should be carted out in the spring, and immediately buried in the soil for a crop of Indian corn or potatoes, in order that the seeds of weeds which it contains may

be destroyed by the hoeings and subsequent ploughings. Or if any part of the dung be retained in the barn-yard, for making composts, it should be that which is under cover; and if this be the horse dung, let it be immediately mixed with some cooling earths, which are fit ingredients for composts.

These may be made of every ingredient that can be gathered together, that is calculated to manure the soil for which it is intended. Clay, sand, mud, lime, peat, &c. may therefore be parts. To these may be added the scrapings of the back yard, turfs on which cattle have long dunged, old rubbish of buildings, earth that has been long covered, banks of rich earth that have been thrown up by the plough against fences, and generally all rich earths which can be spared. On the heaps of composts should be thrown all the soap-suds, dishwater, meatbrine, urine, water that has run from dung, and generally all the filth that is collected in and about the house and barn.

Composts should be frequently stirred up from the bottom, in order that a due degree of fermentation may eventually pervade the whole mass; and when in this state of fermentation, they should be carted out, spread evenly on ground well prepared, ploughed in lightly, and well mixed by the harrowings which cover the seed that is at the same time to be sown.

A heap of compost of this kind may be made to advantage near the dwelling-house, for the purpose of receiving from it the additions that may be afforded there. Or it may be made adjoining the hog-pen, to receive all its contents; for hog dung is an excellent manure for all dry soils. Such a stock would be found of signal use, as a manure for the turnip crop.

These heaps of compost will be the better to be slightly covered, so as to admit no more rains than will serve to keep them in a proper degree of moisture. If properly prepared, they will be found much superior to equal quantities of raw barn-dung; and, if proper pains be taken, very considerable quantities of them may be made every year.

An excellent method of making a large quantity of manure, with little trouble, is as follows: In the spring, enclose a piece of ground, say ten rods long and two wide; have the two end fences so that they can be speedily removed at pleasure to plough the ground more easily. After ploughing it with a cleft furrow, turn the milch-cows and young cattle upon it every night. After they have saturated the surface, plough it with a gathering furrow; and so on alternately, at intervals, until the ground is completely saturated with their stale and dung. Then cart it off, and apply it as before directed for composts.

By first carting earth and rubbish into the barn-yard, the same process of making manure may be carried on there; but this requires an additional carting, which greatly enhances the expense. It is usually better to make these yards in suitable places, and drive the cattle into them, after the cows are milked. They may be made in the field intended to be manured. Sheep, however, should never be shut up in this manner, as it will be found more hurtful to them than the advantage gained by their manure is worth. Perhaps the same may be observed of horses.

Let a slight shed be made in a sheep pasture, and under this cart a layer of sand or other earth. The sheep will resort to this for shade, if it be the only one in the field. As they saturate the earth thus carted in, bring in more and spread it over the other; as this becomes also saturated, let more be brought in, until the mass is raised so high as to render it necessary to cart it off to manure the soil, as before directed. The same process may be carried on in the sheep pen, during winter, to nearly equal advantage. The earth becomes in this way so fully saturated with the urine and excrements, that it becomes very good manure. The stale and manure of horses and other cattle might in part be saved, during the warm summer days, in the manner above directed for sheep.

Mr. Peters says that barn dung should not be completely rotted, before using; but that it should be so

far advanced in putrefaction, as to destroy the vegetative power of the seeds of weeds it contains; that it should be applied to the soil while it is still in a state of fermentation, and during the latter part of the process of rotting.

There seems to be some diversity of opinion, on this point. Some say dung should be perfectly rotted before it is used; while others contend for burying it in the soil before rotting.

We believe that any given quantity of fresh barn-dung may, in most cases, be rendered more productive by being first rotted to a certain degree; and that it will go still farther, when properly mixed in a compost. But, as additional expense must, in either of these cases, be incurred, this should be duly estimated, and regulated according to circumstances.

For instance, if labor is high, the price and the produce of lands low, and the lands already in a high state of fertility, there may be a loss incurred in expending too much labor in making the most of the contents of the barn-yard.

But, if the case be reversed, by the land being deficient in affording the greatest products, the prices of these, and of the land, sufficiently high, and the wages of laborers moderate, there a proportionately increased expenditure, in manuring the land, will be found essentially requisite, for obtaining the greatest clear profits.

A sound discretion is indeed essential, in determining how much may be expended, to advantage, in manuring lands; but, generally speaking, much is lost in falling short of that point where, by the aid of plentiful manuring, the greatest profits are to be expected.

This manure, in its crude state particularly, should always be buried to a good depth in the soil; and in this state should remain there till it has sufficiently rotted; for by lying upon, or too near, the surface, much of its efficacy seems to be lost by evaporation. While the valuable qualities of some manures, such as salts of various kinds, are constantly sinking into the earth, the contrary, in a great measure, seems to be the case with barn-dung.

Old graveyards, where the dead lie closely interred, are always remarkable for their fertility. The miasma produced from the putrefying matter, though laid at a great depth, is constantly rising, and of course enriching the surface; and such, to a certain extent, would seem to be the case with barn-dung, while in a decomposing state.

Mr. Peters observes, however, that grass crops are an exception to the general rule, of deriving most benefit from barn-dung when well buried; as he has always found this manure, like all others, most efficacious in the growth of grasses, when used as a top-dressing.

It would seem that, for crops of this description, its efficacy is principally in serving as a covering to the ground, and thereby preventing the escape of moisture, which is more or less particularly essential to the growth of grasses.

We imagine it will usually be found more effectual, as a top-dressing, for some grasses than for others; and always most so on the drier grounds. For tap-rooted grasses, we think this manure should be buried in the soil.

Under earths, we have described the method of burning peat, and thus reducing it to ashes, for a manure; but we are induced to condemn the practice, unless, perhaps, where it abounds in great quantities on the surface of the earth, as in the county of Sullivan, and the northerly part of Herkimer, and its vicinity, in this state, and in various other parts of the country.

Generally speaking, it is believed that peat may be more advantageously used in composts, in the way before described; as, in this way, its effects will be greater, and much more permanent, as a manure.

Where the surface is but thinly covered with peat, it may be mostly burnt off, in a dry time, after the land is cleared; and then the ashes lie on the land

where they are wanted. But, in such case, it would eventually prove more advantageous to the land to rot or decompose the peat, with lime, as before mentioned; after which the black mass remaining may be mixed with the earth below, so as to render it more permanently productive.

A surface of peat of this description may, however, be successfully cultivated with yearly crops of potatoes, until the peat, by rotting away, can be mixed with the earth below, so as to form a mixture suitable for other crops.

Under moss, that article is recommended as a manure for potatoes.

We have no doubt, that peat made fine, and mixed with some suitable earth, would answer a better purpose, as what seems most essential to the growth of these roots is to be placed where they can most easily extend, having at the same time a due degree of air and moisture; and it is probably, for this reason, that they grow well under a mere covering of straw.

Seaweed (*Urga Marina*) is afforded in considerable quantities on many parts of our seacoast, and is valuable as a manure, particularly for light dry soils. For clays it is not so good. It is best to be ploughed in the soil while green; as, when it has become dried, it is not so valuable as a manure.

It has two advantages over barn-dung; one in common, however, with most other manures—it contains no seeds of weeds; the other is, it tends to render light lands more compact, and for that reason crops of wheat raised on them are but little affected with mildew, while wheat grown on lands long manured with the contents of the barn-yard, becoming thereby more loose and friable, is found, in Great Britain at least, to be most liable to this disorder.

Mr. Davy, in his Memoir to the Board of Agriculture in England, after mentioning the different results of analyzed earths which were found extremely fertile, observes, that,

"In supplying animal or vegetable manure, a temporary food is only provided for plants, which is in all cases exhausted by means of a certain number of crops; but when a soil is rendered of the best possible constitution and texture, with regard to its earthy parts, its fertility may be considered as permanently established. It becomes capable of attracting a large portion of vegetable nourishment from the atmosphere, and of producing its crops with comparatively little labor and expense."

When manures of the common kinds are to be applied, let them be laid on pretty plentifully, and generally for that crop which needs them most. They should be applied evenly to the soil. It is but too common to see dung scattered thickly round where the heaps were laid in carting out; while the ground farther off has little or none; but this is miserable management. All kinds of dung, in composts or otherwise, should be mixed with the soil as soon after carting out as possible, as they loose much by drying and evaporation.

It should, however, be remembered, that soils may be overcharged with composts, or with raw barn-dung. Too much even of composts in a sandy soil tends to overheat it, and thus lessen instead of increasing its moisture; and too much in clays, tends to produce too rank a growth. Raw barn-dung may, however, be buried plentifully in clays, where its fermentation will be so slow as not to produce too great a degree of fertility. In sand, however, it is otherwise. Composts, or even raw barn-dung, is much more efficacious to the growing plants, when laid in the drills where they are planted, than when mixed generally with the soil; but as this requires much more labor and expense, and as the ground becomes hardened by carting on the manure, it is doubtful whether much is, in general, gained by the practice.

Mr. Morgan, of Richland, Illinois, has raised a field of Oats the present season, which yielded eighty five bushels to the acre.

(From the New York Farmer.)

INDIAN CORN PER ACRE.

Mr. EDITION.—In your last number, page 267, your correspondent calls (as I think with less ceremony than he ought) on Mr. Colman, for the name of the farmer that has raised on an average one hundred bushels of corn per acre, and writes to know if they are bushels of ears or shelled corn. As the call may escape Mr. C's notice, or his distant residence prevent an answer for the next number, you may, perhaps, benefit your Elizabethtown friend, by publishing the following, hoping as good success may attend him. I had the pleasure of seeing Messrs. Little's crop of 1822, and must say it was a beautiful sight; and as to the Messrs. Little themselves, they deserve a high rank among the agricultural men of this country. They have taken more premiums, and, probably, labored more hours in the cause, than any men of their age in this country; that is, as to labor, they have attended to that during the usual hours, and a well-stored agricultural library has occupied evenings and rainy days, which, I am sorry to say, are spent by some farmers without the least benefit to themselves, at stores in their neighborhoods, or what is nearly as bad, smoking tobacco, *by the hour*, at home. They can safely be copied after, as they always either *hold the plough or drive*, either of which, we all know is essential to him that would wish to raise large crops, and make farming profitable. But for Messrs. Little's statement, whose farm is situated in Newbury, near Newburyport, county of Essex, and state of Massachusetts.

NEWBURY, N. Y. 5th, 1822.

To the Committee on Green Crops:

GENTLEMEN.—The following is a statement of the cultivation and production of one acre of Indian corn, raised by us:

The soil is a dark clay loam, and in 1821 was planted with beets and carrots, and manured with six cords of manure, made by a brewer in Newburyport, and produced about 400 bushels to the acre. In May, 1822, the land was twice ploughed, and planted in hills, 3½ feet apart, with five cords of composts manure put in the holes; 4 grains of corn were put in each hill, and covered with a hoe. The corn is the 8 row kind, and weighed, when harvested, 58 lbs. to the bushel. The green or unripe corn was not measured. It was hoed three times, and late in the season the few weeds that came up were destroyed. The stalks were topped the middle of September; it was harvested in October, and drawn to the granary and measured; and there were two hundred thirty-two and a half bushels of ears, and a fraction over. By shelling four bushels of ears, the estimate was, that there were one hundred and sixteen bushels, and nine quarts, of shelled sound corn.

The expense of cultivating the above acre of corn, calculating the labor at 4 shillings (66 cents) per day:

Rent of land, - - -	\$ 9 00
Manure, - - -	15 00
May 2. Ploughing, - - -	1 50
" 9. Cross Ploughing, - - -	1 50
" 10. Planting, and putting manure in the holes, - - -	2 75
June 7. Hoeing, - - -	1 00
" 12. Transplanting, or filling up the vacancies, - - -	67
" 14. Hoeing the second time, - - -	1 00
" 25. Do. third time, - - -	67
July 15. Destroying weeds, - - -	33
Oct. 7 & 8. Harvesting and measuring, - - -	5 33
	\$38 75

N. B. The time of topping the stalks, and housing the but or bottom stalks, not taken in the estimate, the value of which we think equal to 1½ ton of hay. Here follow accounts of other crops; for particulars of planting, &c. reference can be had to the different authorities quoted:

1822. Col. Joseph Valentine, of Hopkinton—produce of one acre, 119 bushels, 26 quarts. (See New-England Farmer, vol. 1, page 178.)

1822. John Lees, of Newbury—produce of one acre, 108 bushels and 20 quarts. (See New-England Farmer, vol. 1, page 3-2.)

The town of Eton against the world for corn and potatoes. 1823. Benjamin Bartlett produced satisfactory proof, says the "Madison County Observer," N. Y. that he raised 174 bushels of corn, upon one acre of land—305½ bushels of potatoes, on a half acre of land,—for which he received the two first premiums.

1823. John Lees, Newbury, Mass.—produce of one acre, 113½ bushels shelled corn. (See New-England Farmer, vol. 2, page 276.)

1823. Tristram & Henry Little, Newbury, Mass.—produce of one acre, 115 bushels and 1 quart. (See New-England Farmer, vol. 2, page 277.)

1825. Mr. Wilmarth, of Taunton, Mass.—produce of one acre of corn, 142 bushels. (See New-England Farmer, vol. 1, page 125.)

1824. Stephen Langley, Esq. of Shirley, Mass.—produce of one acre of corn, 112 bushels, and 21 quarts. (See New-England Farmer, vol. 3, page 213.)

1827. John Andrew, Esq. of Salem, Mass.—produce of one acre of corn, 110 bushels. (See New-England Farmer, vol. 6, page 153.)

1831. Benjamin Butler, of Oxford, Chenango county, N. Y.—produce of one acre of corn, 130 bushels, at 60 lbs. to the bushel, or 140 bushels at 56 lbs. to the bushel. (See New-England Farmer, vol. 10, page 153.)

1831. Charles Baglow, Esq. of Palmer, near Springfield, Mass.—produce of five acres, 540 bushels shelled corn. (See New-England Farmer, vol. 10, p. 188.)

Respectfully, yours, &c.

INDIAN.

ROLLING WHEAT GROUND.—Farmers are often heard mourning the effects of winter in injuring their wheat fields. The great and sudden changes of temperature throw the roots out of the ground, and thus kill the plant. Rolling the ground after the wheat is sown has a very great tendency to prevent injury from frost and thaws. Next harvest, many a one, we dare say, will lament that he did not get and use a roller.

[New York Farmer.]

AGRICULTURE,—says Sir John Sinclair, though, in general capable of being reduced to simple principles, yet requires, on the whole, a greater variety of knowledge than any other art.

A potato vine was pulled on the lot of George Weller, of Greenwich, this season, which was 10 feet 2 inches in length. We understand the potatoes were of a size proportionate with the vine.—*Belo. Apollo.*

AGRICULTURAL THIEF.—Gen. James Shelby, of this county, sold a few days since, a flock of 160 mules, raised on his plantation, for the sum of \$12,840 cash in hand. Fourteen of these mules were purchased by the agent of a gentleman of Cuba, and were sold for \$130 each, making an aggregate of \$1,820 for the 14.—*Lexington (Ky.) Intelligencer.*

WEATHER AT HALIFAX, N. S.—During the night-time in the month of May last, the thermometer was below freezing 21 times, and on the 11th was as low as 19 degrees. In June it was no less than 7 times at or below 32. In July it was only eight times above 50, and on three occasions it was below 40. In August it was nearly similar. Sep. 23, the thermometer was at 30.

Some of the British West India sugar planters, are looking at the lands of Florida, with a view of removing there, in consequence of the bill which has passed Parliament abolishing slavery.

HORTICULTURE.

(From the London Horticultural Register.)

ON THE NATURAL HISTORY, CULTURE, AND PROPAGATION OF HERBS.

BALM. *Melissa officinalis*, called by the ancient Greeks *Melissophyllum*, or Bee-leaf, receives its generic name from the Greek word *Meli*, honey, because bees gather an abundance of honey from its flowers. Its smell has been supposed to be very attractive to bees, and hence arose the custom of dressing hives with balm and honey, or sugar, previous to taking a swarm, a practice which still prevails. Pliny mentions the use of these means as prevailing in his day, and he considered the juice to be a good remedy in case of being stung by either bees or wasps. Virgil recommended the use of the juice to entice back a swarm that had strayed, supposing it to be capable of effecting that object. It is a native of the south of Europe, whence, according to the best authority, it was introduced into this country, in 1573. Our old English herbalists speak highly of its medicinal properties, but it has nearly fallen into disuse, except in a decoction which is drunk in fevers. &c. Dr. Whitlaw, in his "Medical Discoveries," mentions it as good for hypochondriac and hysterical complaints, as well as for palpitations of the heart.

Propagation and Culture.—It is propagated by a division of the roots, or by slipping a single stem from the root. The former method may be adopted either in spring or autumn. Plant, in common light soil, both slips and roots, in rows one foot apart, and the plants eight inches apart in the rows, giving a little water if they should require it, and they will soon grow very freely.

To Gather for Drying.—Choose a fine day, just before the plants come into flower, for at that time they possess the most strength. Dry this herb in the shade, as rapidly as possible, or it will partially lose both its quality and color; an heated oven which affords a good warmth will serve the purpose well; perhaps nothing answers better than a small press. When dry, wrap it up in white paper, and keep it in a drawer till wanted for use.

BASIL.—There are about twenty different species of Basil, but only two are cultivated in our gardens for domestic purposes, viz: the sweet or common (*Ocymum basilicum*) which grows to the height of a foot or more, and the *O. minimum*, or least, which seldom attains more than six or eight inches. They are both annuals, natives of India, and consequently tender. The former was introduced in 1548, and the latter in 1573. The generic name, according to Matthioli, is derived from the Greek word *ozo*, to smell, although others think it was named after O-cymus, who first ordained the combats in honor of Pallas. It was also called *Basilicum*, and hence the latter name is by our modern botanists referred to the common species. The whole genus appears to have been held in great abhorrence by many of the ancients. An opinion generally prevailed, that if pounded and put under a stone, it would breed serpents. Chrysippus condemned it 200 years before the christian era, as being hurtful both to the sight and to the intellects. Hollerus related that an Italian had a scorpion bred in his brain, by only repeatedly smelling of Basil. The Africans believed that if any person were stung by a scorpion on the same day that he had eaten basil, he could not possibly survive. Dioscorus thought that the eating of it would breed insects in the body. The Romans, according to Pliny, sowed the seeds with many bitter curses, treading them down with their feet, and praying to the gods that the seed might not vegetate, believing firmly that the more they were cursed, the better they would prosper. Many of the Roman physicians considered this herb to be valuable in medicine. Galen, a Greek writer on medicine, who lived about A. D. 163, says, basil was eaten by many persons in his time; and Gerard remarks that

"the smell of this plant is good for the heart and the head, that taketh away sorrowfulness which cometh of melancholie, and maketh a man merrie, and glad." Schroder, and other medical writers of later days, give it the virtue of cleansing the lungs.

Culture.—In the end of March, sow the seeds in a slight hotbed, but if it be not convenient to make up a bed for the purpose, sow them in boxes or pins, and place them in a cucumber frame, or a forcing-house. When the plants are grown a good size, expose them gradually to the open air. Afterwards take them up in little bunches of three or four together, with good balls, which is more to be recommended than taking them up singly, and transplant them in a warm south border of light rich earth, placing them in rows, allowing six inches both between the rows and from plant to plant. If the weather prove dry, give a little water, and they will soon take root and grow a good size. Persons having no other convenience may sow the seeds broadcast on a warm south border of light fine soil, and if the season prove favorable, they will succeed pretty well, but they never attain any thing like the size of those treated on the other method.

BORAGE. (*Borago officinalis*)—The name of this plant is derived from *Cor*, heart, and *ago*, to affect, on account of its supposed cordial qualities. It is generally believed to be indigenous, though some think it was originally brought from Aleppo. Parkinson, who died about 1640, states that it grew plentifully in Kent, in his day. The whole herb is succulent and very unreligulous, having a peculiarly faint smell when bruised. It was formerly held in great esteem as a cordial; though now but little noticed for any thing but cool tankards, which supply a very pleasant summer drink. The young leaves may be used as a salad, and are considered very wholesome.

Culture.—It is an annual, and is raised from seeds, which may be sown in a light dry soil, from March to May, either broadcast, or in drills eight inches apart. Where they come up thick, let them be thinned out to a proper distance. They will not bear transplanting, in consequence of having long tap roots, unless this operation be performed with great care while the plants are very young. If they be allowed to ripen and shed their seeds, an abundance of young plants will grow for a crop the following spring.

CAMOMILE. *Anthemis nobilis*—The fabulous story of the origin of this plant is, that Anthemis, a virgin shepherdess, kept her flock near the cave where one of the Sybils delivered her oracles. Anthemis frequently assisted at these ceremonies, and being present when the fire of lovers was to be decided, was so frightened, by Arpholides bursting abruptly into the cave to know his doom, that she died on the spot, and was instantly changed into the plant that bears her name. Botanists, however, both ancient and modern derive its name from a more rational source, viz: *Anthemon*, a flower, because the plants are covered with flowers. The medicinal qualities of camomiles have long been known and appreciated, and, according to Pliny, the first person who appears to have recommended this herb as a medicine lived to a great age, without ever experiencing a day's illness. The common single camomiles are preferable as a medicine to the double flowers, having a greater quantity of the yellow Hium, but the double ones are most esteemed as a marketable commodity. The leaves of the plant are commended, in preference to the blossoms, as a digestive, laxative, emollient, and diuretic medicine. The Romans dried and preserved both the flowers and leaves for medicinal purposes, and for the making of wintergarlands. The powder of dried camomile flowers was used in the time of Dioscorides as a cure for intermittent fevers. It is stated by Boerhaave, that the oil obtained from camomiles, made into pills with a little bread, and given two hours before meals, and after a considerable fasting, is a certain cure for worms. Although the flowers are considered tonic, carminative, and slightly anodyne, yet a strong infusion of them,

taken in a warm state, operates as a powerful emetic.

Culture.—The single variety, although possessing stronger qualities, is but little cultivated. It is chiefly found in gravelly pastures and by road sides. Both the single and the double are perennials; they are propagated by dividing the roots, and planting them in small patches in March or April, about eight inches apart, in a light sandy soil. If the weather be dry, give a little water until they have rooted; they will then soon cover the whole bed, and produce an abundance of flowers for several months in succession.

The flowers should be pulled from time to time as they make their appearance, fine days being always selected for the purpose, and the flowers being perfectly dry. When gathered, lay them on a mat or sheet, and spread them out in the sun morning and evening. Never allow them to be exposed to wet, or even to the mid-day sun, for they are liable to lose their virtues by the effect of the latter, and their color by the former. When well dried, put them in paper bags, and shut them up in a dry but close drawer, until required for use.

CARAWAY. (*Carum Carui*).—The name of this plant, according to Pliny, is derived from the country of which it is a native, viz: Caria in Asia Minor. Dioscorides, physician to Anthony, who wrote on medicine and botany, about the beginning of the christian era, calls it *Carum* because the seeds were first brought from Caria. Our botanical catalogues mention it as a native of Britain. It certainly grows spontaneously and very freely in British soil, and as the Romans used much of it in their domestic cookery, it is possible they were the first who cultivated it in England. Whether they introduced it or found it growing wild in this country is uncertain.

Culture.—If the seed be sown in the autumn, it flowers and bears seed the following summer, but when sown in March or April, it does not bear seed till the summer of the second year. It requires sandy loam; it is generally sown broadcast, and, when the plants are two or three inches high, they should be thinned out to six inches apart. No further trouble is then required than to keep them free from weeds. In gathering the seeds, pull up the plants altogether.

CHERVIL. (*Cherophyllum sativum*).—The generic name of this plant is derived from Chairo, to rejoice, and phyllon, leaf; from the cheerfulness it is supposed to produce in the minds of those who eat the leaves. It is annual, and generally considered a native of England, although some think it was introduced from the Austrian Netherlands. It is cultivated in our gardens for the sake of the young leaves, which are used both in soups and as a small salad, with mustard and cress. Pliny tells us that the Syrians cultivated it, and that they supposed it capable of eradicating chronic diseases. Dioscorides and Galen considered it good for the stomach, and for complaints of the liver. The roots of this herb were formerly eaten after the manner of parsnips.

Culture.—There is a curled variety, which is considered most valuable. Sow thinly broadcast in a warm border, about once a month, during the summer season. When the plants are two, three or four inches high, the leaves may be gathered for use, by cutting the plants down altogether, as they will put forth again.

CRAN. (*Salvia Scolarea*) is a biennial plant, a native of Italy, whence it was introduced into England, in 1562. Occasionally it is used in soups, though in our opinion the smell of it is not very pleasant. A very agreeable wine is made by boiling the flowering part of the stem with sugar at the time it is in full blow. It is considered a good medical herb.

Culture.—Sow the seeds in a light soil, in an open part of the garden, any time about March or April. When the plants have attained the height of three or four inches, thin them out to six inches apart. Keep them free from weeds, and they will be fit for use in July.

CORIANDEE, (*Coriandrum sativum*) is an annual, a native of England. Its name is supposed to be derived from *Koris*, a bug, on account of the smell of the leaves of the plant. The seeds are used to conceal the taste of soma, and they prevent the griping occasioned by that medicine. They are also covered with sugar as a sweetmeat.

Culture.—Sow the seeds in March or April, in light soil, in any part of the garden, and nothing further will be required than to keep them free from weeds. The seeds will ripen about the end of August.

FENNEL, (*Anethum Foeniculum*).—Probably the specific name of this plant is derived from *fenum*, hay; because when withered and dried like hay, it was preserved in a similar manner for winter. It is a perennial, and according to our British botanists, indigenous to this country, growing in abundance about Faversham, in Kent, near Brighton, and in many other places, particularly near the seacoast, a situation in which it appears most to delight. The French writers think it was originally brought from Syria; but we are inclined to consider it another variety called *Foeniculum dulce*, or Sweet Fennel, which is much cultivated in France and Italy under the name of *Finochio*. This has a thick stem, and, when earthed up and blanched like celery, eats very tender and crisp. This latter sort is now more generally cultivated, the leaves being used for fish and other purposes, in preference to the common, the quality of it being milder. Fennel is regarded as a very wholesome herb; every part of it agrees well with the stomach. It is used in broth to cleanse the blood, and to remove obstructions from the liver. The seed is an excellent carminative, and is recommended for those who are troubled with shortness of breath, or a wheezing occasioned by the stoppage of the lungs. The steam arising from the leaves in decoction strengthens the sight; the herb facilitates digestion when chewed; a decoction of it is useful in small pox and measles, and the roots boiled in wine are said to be good for the dropsy. Some of the ancient physicians thought it an excellent remedy for the venom of serpents and other reptiles. It was much used by the Romans for seasoning; even the bakers placed it in the oven under their bread to give it a pleasant flavor.

Culture.—Fennel is propagated both by seeds and a division of the roots; it will thrive in any soil or situation. The seeds may be sown in March or April.

THE BRIGHTON ANTHEUM.

Having visited Brighton for the purpose of inspecting this stupendous erection, we are enabled to give our readers a faithful description of the design from our own observations. We confess that we were both astonished and delighted at the boldness and simplicity of the edifice; it rises like a little world out of the earth; already it promises to form a new era in the art of gardening, and to bring about an entire revolution in that of exotic horticulture.

The dome, of which the diameter is one hundred and sixty-four feet, and its height sixty-four feet, exclusive of the cupola, is supported by twenty cast-iron principals, and the same number of auxiliary ribs, the former of which butt against a strong iron ring in the centre, and thus form a gigantic arch without the aid of prop or pillar. The principals spring from a solid mass of rock-work, ten feet below the surface of the earth, and are tied together by seven cast-iron purlings or hoops, which support the wrought iron sash-bars to carry the glass. Notwithstanding the solidity of the building, the lightness of its appearance from the centre is truly astonishing, from which point you can only perceive the edge of each principal, giving it an almost fairy-like creation. Around this dome, an outer circle is forming, which when completed will make the circumference about seven hundred feet.

The planting of the interior has already commenced, and we were allowed to inspect the model and map,

or plan of the grounds, so as to describe it accurately. The centre of the building, which will be heated on a novel plan, is to form a *Palmarium* for the "nobles of the vegetable kingdom," and it is expected that the tribes of the *Musæ* and *Palmæ* will be seen here in greater beauty than they have ever yet been beheld by man. Neither wind nor weather can afflict them, and they will be surrounded by the choicest and most beautiful climbers ever yet congregated into one spot. To the north of the *Palmarium*, a hill of considerable height arises, elevating flowering trees and shrubs in a most natural and picturesque manner, at the same time affording walks over the summit, from which the plants can be looked down upon. At the foot of this hill, a small lake or aquarium is formed, where the beautiful family of the *Nymphææ* are to float amidst other curious aquatics. A bridge thrown over this piece of water affords the opportunity of looking down upon the plants, whilst it adds to the delusion of the scene. In another part, a massive rock rears its rugged form, which is to be covered with the singular tribes of succulents. These are surrounded by spacious gravel walks, and grassy brinks covered with flowers, and overhung by trees and shrubs from all the warmer quarters of the globe.

This princely undertaking has been wholly designed and executed by an individual well known to the world by his writings on plants, particularly the *Pomarium Britannicum*, *Flora Historica*, &c. It is expected to be entirely completed about the end of September, and we sincerely hope it will realize Mr. Phillips' most sanguine expectations. Indeed we cannot for a moment doubt its success in a pecuniary point of view, for we are sure no person will go to Brighton without visiting this unique garden, which so entirely leaves in the shade the most splendid conservatories hitherto erected, with which they will bear no sort of comparison. We were pleased to learn that many noblemen and gentlemen, as well as nurserymen and gardeners, have already sent presents of plants to assist Mr. Phillips in his spirited undertaking. His Grace the Duke of Devonshire has been a liberal contributor, and we hope others who have collections will follow the example, for it may be deemed a national institution, which cannot fail to produce many beneficial results.

[We had marked the above extract for insertion, when, to our great surprise and equal regret, we saw, in the *American of Friday last*, the following account:]

Brighton, (Eng.) September 1.

FALL OF THE BRIGHTON ANTHEUM.

This stupendous structure has shared the fate of the Brunswick Theatre; but happily the destruction of it has not been attended with loss of life. It fell on Friday evening with a tremendous crash, and the noise it made resembled the distant rumbling of thunder.

This immense edifice was commenced about twelve months since, under the superintendence of an eminent botanist, Mr. Phillips, of this town, whose knowledge of Horticulture is very extensive. The building was composed entirely of iron, weighing between 400 and 500 tons, and it formed the largest dome ever constructed, exceeding in size that of St. Peter's, in Rome, by upwards of 8000 superficial feet. The glazing, which was to have commenced on Monday, would have taken a long time to complete, it requiring nearly two acres of glass to cover the dome. The planting had been commenced some time, the choicest plants had been collected, and a great many eminent persons were contributors, including the Duke of Devonshire. The work had progressed rapidly, and the building promised to stand a monument of architectural beauty. A great portion of the scaffolding had been removed, and on Friday afternoon the whole of it was taken down, and every thing appeared firm. In an hour or two afterwards, however, a portion of the iron work was heard to crack, and the workmen having timely notice of the same, removed from the premises. The cracking continued for some time, and then fears were entertained for its safety. The principal gardener

had scarcely left the interior, when it came tumbling down with an awful crash, the immense ribs of iron snapt asunder in ten thousand pieces, and a great part of it, from the height it fell, was buried several feet in the earth. The destruction of this great edifice is accounted for only by the immense weight of iron at the top, which, when unsupported by the scaffolding, folded in, and forced its way to the ground. The ruins were visited yesterday by several hundred persons. It was situated at the western extremity of the town, and would have formed one of the most splendid ornaments in the world.

FALL TRANSPLANTING.—As soon as a plant has so far completed its summer growth, or matured its wood, as to begin to drop its leaves, it may be transplanted with safety. Transplanting in the fall, in preference to that in the spring, has many experienced and decided advocates. No person who wishes to set out plants should neglect to do it in the fall, if he has the means and the time. If delayed until spring, it is often put off for years. More depends on the care in taking up the plants than on the season. Last spring we took up an apricot tree, 15 to 18 feet high, in full bloom, and carried it half a mile. It ripened fruit, and showed no indications of having received injury. On taking it up the roots were immediately put into a large tub, and covered with water and soil. Whether transplanted in the fall or spring, the fibrous roots should be exposed to the air as little as possible. When a plant is in foliage, or in a growing state, it is curious to see how soon and how greatly it is affected by an exposure of the roots to the sun or air the shortest possible time. A fish out of water, or a person immersed in it, is not more sensitive.—*New York Farmer*.

READFIELD AGAINST ALL CONNECTICUT.—We have just examined some large onions, raised by Mr. Madison Page, of Readfield, some of which were nearly a foot and a half in circumference—that is to say, *fifteen inches*. Mr. Page raised fifteen bushels upon a piece of ground fifteen feet square, after the rate of *two thousand nine hundred and four* bushels to the acre. The ground was rich—the seed was planted early, and the ground then **PRESERVED DOWN VERY HARD**.—*Maine Farmer*.

INFLUENCE OF THE MOON ON RAIN.—From the comparison of a series of observations, continued for twenty-eight years at Munich, Stuttgart, and Augsburg, by Professor Schubler, it appears that the maximum number of rainy days takes place between the first quarter and the new moon. The number of rainy days in the last of these intervals is to that in the first as 696 to 815, or in round numbers, as 5 to 6. And this proportion is not only true of the twenty years taken together, but also of the separate groups of four years, which give analogous numbers; we therefore conclude that it rains more frequently during the wane of the moon. The result obtained by Schubler receives support from a series of observations made by Pilgrim, who found the falls of rain to be as follows: New moon 26, mean of the two quarters 25, full moon 29; consequently at Vienna as at Augsburg and Stuttgart, it rains more frequently on the day of the full, than on that of the new moon.—Arago remarks in regard to the observations, "Confining ourselves to the principal results, it seems difficult to resist the conclusion that the moon exercises an influence on our atmosphere; that in virtue of this influence rain falls more frequently towards the second octant, than at any other epoch of the lunar month; and, lastly, that the chances of rain are fewest between the last quarter and the fourth octant."

Some of the Cherry Trees on the Cameron Farm, near Alexandria, D. C. have budded and blossomed anew lately, and give indications, at present, of yielding a second growth of fruit.

RURAL ECONOMY.

DUTCH BUTTER.

The superior quality of the Dutch Butter may probably proceed, in part at least, from the soil and climate, and partly from the breed of cows; but most of all, from the careful and cleanly manner in which all the operations of the dairy, regarding butter in particular are conducted in that country. The soil, in all parts of Holland, is favorable to the growth of meadow grasses. And though much of the soil is too pamy, yet it is rich; and being impregnated with salt, with which the herbage is also tinged, the cows eat a large quantity of the herbage with impunity, and which no doubt, enriches the quality of the milk. The climate too, is favorable to the growth of cows. It has been found, from experience, that when cows are fed upon good natural herbage, the butter is richer, and has a finer flavor, than when the same cows are fed on clover, turnips and artificial grasses. The cows in Holland give a greater quantity of butter in proportion to the quantity of milk.

The cows of the improved dairy breed in this country, that are fed on artificial herbage, give more milk and less butter, than the same do when cows are fed on natural pastures. All cows that are in good condition always give richer milk than the same cows when they are lean.

The superior quality of the butter proceeds more from the cleanly and careful manner in which it is manufactured than any other cause. The milk, when drawn from the cows, if butter is to be made, is poured into earthen ware, or wooden dishes, to cool, in well-aired milk house for twelve, eighteen or twenty-four hours. The cream is either floated over the sides of the coolers, or taken off with a skimming dish and stored in a jar, till as much is collected as may be convenient to be churned at one time. And to prevent decomposition of the cream, it is stirred about once or twice every day with a wooden spattle. The cream is churned in an upright churn, the staff of which is moved by a gin turned by a horse. Two hours are generally allowed for the churning process. When the cream is too cold, it is warmed by throwing some hot water into the churn, to bring it to about 70 or 75 degrees of temperature of Fahrenheit's scale. The butter, when taken out of the churn, is placed in cold water, and the milk is carefully washed out of it by kneading it with the hand or skimming dish, in renewed changes of water. The butter is then salted with the finest salt, which requires to be minutely mixed with the butter.—*London Quarterly Journal of Agriculture.*

COTTON SEED OIL.—A writer in the Southern Banner, after speaking of a greatly improved machine for hulling the seed, invented by L. Johnson, Esq. of Madison, Ga., thus estimates, rather highly, the benefits of cotton seed oil:

"It remains to show the immense advantage which is in store for this country, from this at present unimproved resource. The cotton crop of Georgia, for instance, is 250,000 bales, which, at the usual price obtained is equal to 6,000,000 dollars. In the seed this crop weighs three hundred millions, and takes about 600,000 acres to produce it. The fibres when taken off, being one-fourth of the weight, leave two hundred and twenty-five millions of pounds of seed, which, at thirty weight to the bushel, leaves in bushels, 7,500,000. From this quantity, subtract one million and a half, necessary to plant 600,000 acres, and there will then be a balance of six millions, equal to three millions of gallons of oil, or three millions of dollars, half the value of the cotton crop—one which is such a vast source of wealth to the people of Georgia. This is exclusive too of the cake, worth seven hundred and fifty thousand dollars more.

BROOKS' PATENT SILK SPINNER AND TWISTER.—This machine for spinning, doubling, and twisting silk, may be seen at our office. It is very simple in its operation, and performs its work with ease and neatness. It was invented by Mr. Adam Brooks, of Seitate, Mass., who has secured a patent for it. This machine promises to be an important aid to those who wish to cultivate and manufacture silk, as by it, the silk may be reeled or spun from the cocoons, doubled, twisted, and made into thread, warp, or filling, according to the designs of the operator.

Nothing now is wanting to enable every farmer to cultivate and manufacture his own silk, and not only to furnish himself, but also prepare what he does not want, in a neat and expeditious manner, for the market. We sincerely hope Mr. Brooks will meet with an ample reward for his ingenuity.—*Maine Farmer.*

MISCELLANEOUS.

THE CASHMERE ANGORA SHAWL GOAT.

The last number of Silliman's Journal contains a description of this animal, and the attempts to domesticate it in Europe. The first race, imported from Persia to France, under the patronage of the government, promised little profit to their owners. They were healthy and hardy, of various sizes and colors. The soft fleece, which alone was valuable, was very small in quantity, overgrown and almost concealed by long hairs. After a few years, a very superior herd was raised at Versailles, possessing the best qualities of the original Cashmere, with those of the soft, silky-haired native Angora. Some of this improved breed yielded thirty ounces of down in one season, and the whole herd produced from twelve to twenty ounces each; while the original Cashmere never yields more than four, and seldom exceeds two ounces. The animals are less capricious than the common goat, may be more easily kept in a flock, and more docile than sheep. The down falls in a manner similar to the wool from sheep, in the month of March, and may be taken off in locks, by separating it gently with the hand from the skin. It is best, however, when sheared off in one fleece, as soon as it begins to loosen. The parallelism is thus better preserved, and it is more readily combed and prepared for manufacturing purposes.

They are not difficult to keep, but are allowed to remain all winter in open sheds. Like all other browsing animals, they prefer the leaves of trees, but thrive well on hay, straw, green fodder, or in meadows. Mr. Polonceau, the owner of the flock at Versailles, at first gave them aromatic herbs, occasionally for a year or two; but of late, has discontinued the use of them, without any injurious effect. The down commences growing in September, arrives at full maturity in March, when it falls off, unless removed artificially. The British Society for the Encouragement of Arts, Manufactures and Commerce, awarded to William Riley, their gold Isis medal for his importation from France, of a select number of these animals, with a view of introducing them into the colonies of New South Wales and Van Dieman's Land, the southern parts of which are in corresponding south latitudes with Cashmere in Thibet, and Angora in Asia Minor in the north. Versailles, where this herd is so flourishing, producing more down than in their native districts, is twelve or fourteen degrees farther north than Thibet, and eight degrees farther north than Angora, which is in north latitude forty, two hundred miles E. S. E. of Constantinople.

The correspondent of the Journal, from whose letter we have abridged these particulars, concludes with the following suggestions:—

From reviewing all these localities, we may presume that our own country, within its boundless varieties of climate and vegetable productions, may yield such favored spots, as will enable the enterpris-

ing agriculturist to domesticate this valuable animal, as well as the choice varieties of foreign sheep; and with much greater probabilities of success, than attended the first attempts at the culture of silk, which was, for ages, believed to be a particular gift of Heaven to China, from whence it was not deemed possible to extend it, to any other region of the globe.

M. Polonceau, who has the choicest herd in Europe, perhaps the only one of Cashmere Angora, disposed of four to the King of Wurtemberg, in 1828, for the small sum of three thousand four hundred francs; and in 1831 parted with thirteen more to Mr. Riley, as above stated. This race of animals have not in the least degenerated, since they first came into M. Polonceau's possession, ten years ago, but their peculiar properties become annually more and more fixed. The superior quality and quantity of their fleeces, with the precious nature of the materials offer strong inducements to the agricultural capitalist, of some of our mild hill countries, to obtain some of them by way of trial.

The herds of M. Polonceau are probably, by this time, so numerous as to enable him to sell a sufficient number for an experiment, which, if successful, would secure a profit to the proprietor, and accomplish an important national object. The peculiarities of climate and the vegetable productions of Angora, with the habits of the goat on its native soil, might be ascertained beyond doubt, by application to our countryman, Commodore Porter, who is investigating a variety of subjects in that part of Asia which is most interesting to science, manufactures and commerce.—*Boston Courier.*

A BIRD'S EYE VIEW.

The Rail Road from Winchester, in Virginia to Harper's Ferry will be under contract the whole distance, before the 1st January, 1834, in small divisions, so as to insure a speedy completion of the Road. Before it is done the Baltimore Road will be at Harper's Ferry, and so will the canal from Washington. In the same time the Road from Washington to Baltimore will be in "full blast;" in the same time, the rail road from Baltimore to Philadelphia will be travelled the whole distance by locomotives, in six hours; in the same time a rail road and canal communication will traverse the Allegany, and connect Philadelphia with Pittsburg; in the same time, the Boston and Providence Road will be completed; the Fredericksburg and Richmond will follow. The Rip Van Winkle of the South is waked up, has rubbed her eyes, and will carry out the line from the Roanoke, through North Carolina, to the South Carolina road; and active exertions, "now being made," in Georgia, will connect Augusta and Athens. From Boston, New England enterprise is travelling to Portland, in Maine, and the Maine folks will go farther "down east." In the meantime, all the Atlantic cities are looking to the great West, the garden of the world. Boston is carrying out a line of Road to Albany. New York in this same time, will have another string to her bow, by a rail road through her Southern tier of counties striking lake Erie further South than does her canal. Philadelphia is already, as we have said, within striking distance of her eldest and most fruitful daughter on the western waters—the city of Pittsburg—Baltimore is going west—she cannot exactly tell yet in *what direction*, Richmond is moving all Acheron to reach the Kanawha; and Charleston in South Carolina, will push on till her road passes Camden and reaches Cheraw.—And all this is but the commencement—hundreds of lateral roads will feed the main streams. The stock will thus be constantly getting better; deserted plantations will revive as if touched by a magical wand; the increased value of property in the neighborhood of any road will be equal to the expense of constructing it. The union will be bound by "the bands of a man"—the inter-communication will be rapid—local

interest and prejudices, dissipated—nullification buried in some of the "deep cuts"—and the Bank deposits quickly and safely transported; and this would save some of our good friends so much anxiety that it will be worth all the trouble and all the expense of all the roads.—[Winchester Republican.]

To THE EDITORS of those papers for which we exchange the Farmer, and which are at a less price than ours, we beg leave to present our respects, and to ask as an equivalent for the "difference" the insertion in their respective papers of our "general advertisement" (below) say two or three times immediately, and about once a month till March next.

(General Advertisement.)

SEEDS, TREES, PLANTS, DOMESTIC ANIMALS, IMPLEMENTS, BOOKS, &c. &c.

For sale at the

AMERICAN FARMER ESTABLISHMENT,

No. 16, South Calvert street, Baltimore, Md.

THE subscriber presents his respects to farmers, gardeners, and dealers in Seeds throughout the United States, particularly his customers, and informs them that he is receiving from Europe, from his own Seed Garden, and from various parts of this country, his annual supply of FIELD AND GARDEN SEEDS; and that he will, by the first of November, be prepared to execute orders, wholesale and retail, with promptness and accuracy, at as low prices and on as favorable terms as can be afforded by any dealer in the United States, for first rate articles.

FRUIT and ornamental trees and plants, grapevines, shrubbery, bulbous and other flower roots, will be procured to order from any of the principal Nurseries or Gardens in this country, for most of which the subscriber is agent; also,

PLOUGHS, harrows, cultivators, straw cutters, wheat fans, corn-shellers, threshing machines and all other kinds of Agricultural and Horticultural Implements, will be procured from the best manufactories in Baltimore.

DOMESTIC Animals, particularly cattle of the Improved Durham Shorthorn, the Devon and the Holstein breeds; sheep of the Bakewell, Southdown, and various fine woolled breeds; swine of several valuable kinds, especially of the Barnitz breed; various kinds of poultry such as the white turkeys, Bremen and Westphalia geese, game and other fowls and several other species of animals, all of choice breeds (and no others,) are either kept for sale at the experimental and breeding farm of this Establishment, or can be procured from the best sources, to order.

BOOKS, Agricultural, Horticultural and Botanical, in much greater variety than at the bookstores—some of them rare and particularly valuable, are kept constantly for sale.

In short, all articles wanted by farmers and gardeners in the prosecution of their business, are intended either to be kept on hand, or within reach when called for.

And though last, not least, that old and well known vehicle of knowledge (the most valuable of all commodities for a tiller of the soil)—the AMERICAN FARMER, is published weekly, at this Establishment, at \$5 a year, where subscriptions and communications are respectfully solicited, addressed, as all letters must be, to the editor and proprietor.

L. HYNE HITCHCOCK.

Note.—An "Extra" number of the American Farmer, containing a Prospectus of the Establishment, and a catalogue of Seeds, and other articles for sale, will be sent gratis to any person who shall furnish his address, post paid, for that purpose.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

L. I. HITCHCOCK,

Aug. 30.

Amer. Farmer Establishment.

BAKEWELL RAM.

I have the disposal of one of these fine animals, from Mr. Barney's flock—yearned last spring. Price \$75. Who will have him? L. I. HITCHCOCK.

DEVON AND SHORTHORN CATTLE.

and other Superior Stock, for sale.

To be sold, at the Three Tuns Tavern, on Saturday, the 16th day of November, at 12 o'clock, a variety of Cattle, of the Devon and Shorthorn breeds, of pure blood, and superior in quality, consisting of

- 1 Devon bull, 4 years old.
- 1 do 2½ years old.
- 2 bulls, half Devon and half Shorthorn, one 2½ years old, the other 1½ year.
- 3 Devon heifers, 18 months old.
- 3 Devon bulls, 15 to 18 months old.
- 4 Devon heifers, with bull calves, from a Shorthorn bull.
- 4 bull calves, half Devon half Shorthorn.

The famous bull Tecumseh, is the sire of all the above Shorthorn offspring.

- 6 Devon cows, in calf by a Devon bull.
- 6 rams, of the Bakewell and Southdown blood—the Bakewells are of the stock of Mr. Barney.

1 colt, of very fine promise, 2 years old in June, upwards of sixteen hands high—from Mr. Whit's horse.

2 colts of the Tom breed, one 16 months old, the other, 2 years four months.

A Jack of the blood of the Knight of Malta, and the Royal Gitt—about 13 hands high, and of very great bone, a fine foal getter.

A Mule, the colt of the above Jack, 14 months old.

The above stock has been raised on the estate of Brooklandwood, the residence of R. Caton. Apply to

EVAN HUGHES, Manager, or
H. W. BOOL, Auctioneer.

Baltimore, Oct. 18, 1833.—51.

FRUIT TREES.

The subscriber has the sole agency in this city for disposing of FRUIT TREES, from the Nursery of Mr. Samuel Reeves, of New Jersey, which establishment has gained a high reputation for the quality of its trees and their fruit, a specimen of which can now be seen at my store. He will also receive orders for fruit trees, to be furnished by Mr. Saml. Gray, whose trees are already well known in this vicinity, orders for this season should be forwarded immediately.

J. S. EASTMAN.

N. B. In store SEED RYE, of prime quality, and also red chaff and red bearded WHEAT. J. S. E. Oct. 15.

AGRICULTURAL IMPLEMENTS,

Seeds and Fruit Trees.

SINCLAIR & MOORE, corner of Pratt and Light streets, offer for sale a general assortment of the most approved kind of PLOUGHS of various sizes and patterns—both with wrought and cast shears—also, extra shears and heels to supply the demand for old Ploughs.

CYLINDRICAL STRAW CUTTERS of the following sizes and prices, viz.—11 inch box, \$27—14 inch do. \$45—16 inch \$55—20 inch do. \$75—this last size is a very powerful machine, and is adapted to horse or water power, but may be used advantageously by hand. The smallest size of these boxes will cut 300 bushels per day, the 14 inch box will cut about 700 bushels per day—also, common straw cutters at \$5 to \$7 50.

CORN SHELLERS with vertical wheels, the most durable and efficient kind—Lanes' Patent THRESHING MACHINE and HORSE POWERS—Improved WHEAT FANS, Harrows, Shovels, Spades, Mattocks, Picks, Brier Hooks, Cast Steel Axes of superior quality, &c. &c. Clover, Timothy, Orchard Grass, Herds Grass, Tall Meadow Oat Grass, Lucerne and White Clover Seeds.

FRUIT TREES, a great variety—Catalogues to be had at our store.

N. B. The inconvenience and expense of collecting small accounts at a distance has induced us to adopt as a general rule of business, that all small bills must be settled in cash or town acceptances on delivery of the articles—a discount in prices will be allowed for cash, where the articles purchased are of sufficient amount to be an object.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address L. I. HITCHCOCK.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 5.00 a 5.00; do ground leaf, 5.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red, 1.50 a 6.00; fine red, 6.00 a 8.00; wrapery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00—Virginia, 1.00 a ————Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 340 hds. Maryland; 9 hds. Ohio, and 1 hd. Virginia.—total 350 hds.

Flour.—Best white wheat family, 7.00 a 7.50; 2d quality, 6.50 a 7.00; super Howd street, 5 62½ a 5.87½; (wagon price, 5.50, a ———) city mills, 5.75 a 5.87½; city mills, extra, 6.25 a ———. CORN MEAL, per 100 lbs. 1.50 a 1.56.—Grain, red wheat, 1.13 a 1.14; white do 1 15 a 1.20.—Corn, yellow, 65 a 66; white, 60 a 62; in the ear, 2.25 a 2.50 per bbl.; RYE, 65 a 69; chop rye, per 100 lbs. 1.56 a ———. OATS, 31 a 33.—BEANS, 75 a 80.—PEAS, 65 a 70.—CLOVERSEED 5.00 a 6.00.—TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a ———; Tall Meadow Oat Grass 2.50 a ———; Herd's, 1.25 a ———. Lucerne 37½ a ———. LO.—BARLEY, 75 a ———. FLAXSEED, 1.37 a 1.50.—Cotton, Va. 15 a 16; Lou. 17 a 18½; Alab. 16 a 17; Tenn 15 a 16; Upland 16 a 17.—WHISKEY, hbls. 1st p 29 a ———; in bb's. 31½ a 32.—WOOL, 1st shed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 52 a 58; three quarters do. 47 a 52; half do. 42 a 47; quarter do. 37 a 42; common 37 a 42.—Unwashed, Prime or Saxony Fleeced, 31 a 37; American Full Blood, 28 a 31; three quarters do. 25 a 28; half do. 24 a 25; quarter do. 21 a 25; common, 24 a 25.—HEMP, Russia, ton, \$170 a 180; country, dew rotted, 6 a 7c. In water rotted, 7 a 8c.—Feathers, — a 10.—Plaster Paris, per ton, 4.00 a ———; ground, 1 37½ a ———. hbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sls. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.50 a 5.00.—Oak wood, 3 60 a 3.75; llickory, 4 50 a 4.75; Pine, 2.50.

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GENERAL

Agricultural and Horticultural Establishment; COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore; in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

— An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, NOV. 1, 1833.

A CARD.—The Proprietor of the American Farmer Establishment, aware of the disadvantages under which he labored in many instances the last winter for want of a direct conveyance between Baltimore and the ports of North Carolina, has the past summer, made arrangements with certain houses in New York to forward without delay, all packages, animals, &c. that he may send by that route. In all cases therefore, when he cannot send to those ports directly, he will avail himself of this alternative, so that his North Carolina customers may depend on all articles ordered, being promptly forwarded.

We cannot pass over without notice, the exhibition of the *right spirit* which actuates our friend Weller, whose communication we publish in the present No. We beg him to accept our thanks and we exhort our other subscribers to "go and do likewise." Let our publication be considered as neighbor Rolfin suggests, a **SAVINGS BANK OF KNOWLEDGE**, and let him who checks for a small amount each week, not forget to make his deposit occasionally. Thus will all concerned be gainers, and American Farmer stock yield a rich interest, not to its holders only, but on like other banks, it will be most profitable to its customers.

By the way, is there not an *instalment due*, and by many unpaid? There are indications of a *run*, and it depends much on our delinquent subscribers whether we have or have not to run also. Pray remit.

ANOTHER CURE FOR DYSPEPSIA.—A "man of Boston" says, he has cured himself of dyspepsia by eating curd and whey, and that several others also, have tried it with success. Who would not be cured of such a disease by such means? but this is of no importance to Farmers—they never have dyspepsia.

LODGING OF WHEAT.

An intelligent friend who called at our office a few days ago, communicated to us the result of an experiment made by him relative to the lodging of wheat.—He prepared two pieces of ground precisely similar in quality and aspect. On both of which he sowed wheat, on one he sowed *broadcast*; on the other in *rows*, which was thus effected; the land was ploughed as usual, but instead of harrowing it, he sowed his wheat immediately after the ploughing; of course the seed fell naturally into the furrow, very little remaining on the ridges. After sowing, the field was harrowed, not crosswise, but in the same direction as it was ploughed. This last operation cast the seed almost entirely into the furrow at the same time covering it—and when the wheat came up, it stood close and thick in rows, almost as perfect as if planted in drills. This field of wheat succeeded perfectly and the grain remained erect, whilst that on the adjoining field, which had been sown broadcast, lodged.

The rationale, (as London would say) of this, is as follows: In the field sown broadcast, the grain stands close and the circulation of air is prevented or at least impeded; the stalks, deprived of the influence of this element, remain soft and tender, are unable to support either themselves or the weight of the ears—and the wheat lodges. In the other case, the spaces, either vacant or but thinly covered, between the drills admit the air to circulate freely, by which the stalks become firm and hardened.

"The lodging or falling of some kinds of grain and of grass," says Nicholson, "is owing to their standing too thick to admit of a free circulation of air, by means of which only they can preserve a healthy state.—Plant one grain of wheat, for instance, in the richest soil, and the stalk when grown will not fall; but

plant a great number of grains in the same soil, so closely together as to preclude a free circulation of air amongst the stalks and they become unable to sustain their own weight."

The late increased demand for hops in New-York, and the high prices which the article commanded in consequence of the exportation of large quantities to Europe, appear to have set our friends in the north "all hopping." Every northern agricultural paper that we open abounds in "hops, hops." It would seem, from the following article, that one, at least, of these active gentry, has hopped into a pretty round sum.

HOP CULTURE.—The Bangor Courier mentions that one of the packets of that place, bound for New-York, recently took on board two hundred bales of No. 1 hops, raised in Penobscot. The value of this quantity was \$8000, and the present prices of the article make the crop worth, on an average, \$150 per acre. As the Maine soil and climate are suited to the culture, we see no reason why it should not be carried, in that as well as other sections, much farther than it has been. In Great Britain, about fifty thousand acres are occupied with hops.

Now this kind of business, at the rate of "\$150 per acre," we would like very well to be at, if we only knew how. Has any of our subscribers ever cultivated the hop to any extent in this section of country or farther south? and if so, cannot he or they tell us something about it? We should like to be "made sensible" of the practicability, prospects of success, and advantages of this culture with the method of conducting it.

To the Editor of the American Farmer.

SIR:—I have known your paper for some years, and have often thought that its utility might be much increased if you could prevail upon experienced practical farmers to make known to you, and through your paper to the world, the results of their practice and experiments. I have myself known some farmers whose practice in certain cultures was quite peculiar, and at the same time successful, whilst others who were not acquainted with that peculiar mode, were totally unsuccessful in precisely similar circumstances. Ask the farmer why he does not make known his own method, and he will say (very likely,) "Oh! I thought every body knew it," or perhaps he will excuse himself on the score of inability to write, or of being unwilling to appear in print.

This modesty (or rather this shame-facedness) is out of place. A farmer is not expected to compose with all the ease and polish of a "man of letters"—the hand that guides the plough may be excused for forgetting when it holds the pen and drawing in its forgetfulness a *furrow*, once in a while. It is the matter not the *manner* which is to be looked to—and in case of need, if the matter be good, the *editor* may reform the manner, and it is his place to do so.

I hope, sir, you will excuse my freedom, but I think it would be a great advantage to your subscribers, to obtain from farmers, such communications. Young and inexperienced as a farmer, I can do nothing but ask for information. Perhaps your demand for the same article may produce a supply which will be serviceable to your readers, and to none perhaps more so than to

Your obt^d serv't.

Oct. 1833.

GEORGETOWN.

PROFESSOR HENRY'S MAGNET.—An artificial Magnet has recently been constructed by Professor Henry of Princeton College, which far surpasses in power every thing of the kind.

Upon one trial of its strength, it was found to be capable of raising between three and four thousand pounds, and we learn that, with some farther modifications of the apparatus, the Magnet will probably be able to sustain upwards of four thousand pounds.

To the Editor of the American Farmer:

Sir.—At the risk of being laughed at for the ignorance here betrayed, I beg you to resolve the following doubts for me.

When we are told, (as every work on horticulture tells us) not to plant apple, pear, and quince trees near one another, it is that the farina of the blossoms of the one may not be mingled, by wind or insects, with that of the others. Now, the question I wish to ask is this: Does this intermixture of farina affect the *fruit* then in embryo, or does it only affect the *seed* of the fruit? For instance, if a common pomme d'api apple tree, be in full bloom at the side of a St. Germain pear tree, will or can the intermixture of the farina of their blossoms give the pomme d'api a St. Germain taste, or the St. Germain a flavor of pomme d'api? That the *seed* of fruits and vegetables are affected by an intermixture of the farina of one with that of another of a different species but kindred genus, seems to be well ascertained; and hybrids have been procured by that process of impregnation. But there are so few of us who plant seed for the purpose of obtaining *varieties*, or with the intention to wait until it yield fruit like that of the parent tree, that it is not worth our while to be at any pains to keep the trees separate, if their proximity do not injuriously affect the *fruit*.

My questions, apply, of course, to those plants only that may be, and commonly are, propagated by cuttings, grafts, buds and layers, and not to annuals and biennials, such as the melon and cabbage tribes.

AN AMATEUR.

(From the Lynchburg Virginian.)

INQUIRY.

What has become of the Weevil?

About twenty years past, the black weevil were very numerous, they decreased gradually, and I have not seen one for eight or ten years. The white weevil have likewise been numerous till last year, when none appeared, neither are any to be seen this year. There is another kind of weevil I have known to do considerable damage; they are about one-third the size of the white weevil, of dark color, slender, and have feeders like a wasp; these have likewise disappeared for several years.

I have not this year seen a single tobacco fly.

It is requested that inquiry be made throughout the United States, through means of the newspapers, whether or not these insects are yet to be found in our land, and if so, where? From an inquiry and investigation of this subject, benefit may arise other than that of gratifying curiosity.

(From the Kanawha Banner.)

ORCHARD GRASS.

The graziers of the valley pronounce it more nutritious than either Timothy, Clover, or Herds Grass, and it is by uniting this grass with the two first that the proverbially fine pastures and meadows of the central counties of Pennsylvania are found. It resists the heat of our summers, and recovers from the effects of the hoof and the tooth very rapidly. For seed lots, two bushels should be sowed to the acre; and for the scythe, or for pasture, the mixture should be one bushel of Orchard grass and one gallon of Timothy seed, over which a gallon of clover seed should be scattered in March.

There are now to be seen, at Thorburn's Seed store, in North Market-street, *twenty apples, weighing in the gross, twenty one pounds one ounce*—the heaviest exceeding twenty ounces. And, what is not the least part of the novelty, they actually grew upon the Albany barrens!—*Alb. Argus.*

One farmer of Stark co. Ohio, last year, raised, with the assistance of two boys, one plough and one harrow, 1700 bushels of the various kinds of grain.

AGRICULTURE

AGRICULTURAL EXPERIMENTS.

Drinkleyville, Halifax Co. N. C.)
October 23, 1835. }

MR. HITCHCOCK:

In compliance with your request for contributions to the columns of your valuable periodical, I send you this communication to be disposed of as you deem proper. A communication, for which, if asked for a heading or title, I should say "A miscellaneous article of experiments and results on a small southern plantation." I write, as I prefer seeing others do in your columns, just as if I was detailing my agricultural experiments to a friend. And as, in general, I am more interested to adopt the improvements of correspondents in the "Farmer," who sign their proper names to their communications, than by anonymous writers; so I affix my name to this; not influenced I hope by any motive of vanity, but actuated, as one of your correspondents, by an ardent desire to contribute my mite towards advancing the all important and honorable cause of agricultural improvement in our country.

As an instance of the influence of a name, in my own case, to induce adoption of declared improvements, and to begin my miscellany, I will allude to the address of Mr. Girard, last spring, to the agricultural society of Fredericksburg, Va. Having lived a year near the residence of this gentleman, I knew his worth as a man as well as a writer on agriculture. Since reading said address in your columns, I have used with all the effect anticipated, his "weed book," and his "drill" for sowing small seeds; such as the Ruta baga. And I have tested to my entire satisfaction the experiment he related of planting corn in double drills. Having selected a spot of ground and run large furrows, six feet apart, I filled some of them with my coarsest barn yard manure; others with dry pine leaves, and others again with green pine bows. Then, having covered all by running a furrow each side of every large furrow and coulturing the bottom of these last furrows, I planted and cultivated as Mr. G. described. The corn of that manured from the barn-yard was the best. I did not measure the product from the plot of ground planted as above. But suffice to say, that several of my intelligent neighbors, who viewed the corn when standing, concurred with me, in considering that there was doubtless, more than double the quantity made by this mode, that there would have been if the ground had been planted in the common way.

I have about two acres of Ruta Baga this season. The plants have flourished, surprisingly, considering the long spell of dry weather we have had here. I have reason to believe that this turnip endures the want of rain much better than most other kinds. I transplanted about half of mine by thinning the rest, and notwithstanding it was difficult to raise a moisture by fresh ploughing the ground, yet very few of the transplanted ones died. For family use and feeding stock both, as to leaves and root, the Ruta Baga continues to more than realize my expectations. But the plant has a formidable enemy with us in what are here called cabbage lice. They have been particularly destructive to the plants set out for seed. Several of my neighbors to whom I gave roots to procure seed, lost all theirs, and notwithstanding I planted a considerable number for seed, it was with difficulty and only by the tedious process of frequently killing the roundish spotted bugs which produce the mischief, that I preserved any seed the last spring. Then considerable damage has been done to the growing plants this fall. Can any correspondent in the "Farmer," point out some easy and effectual remedy for the evil in question?

Not to be tedious Mr. Editor, I will close this letter, by stating a few particulars concerning the contents of the box of vines, seeds, &c. which you forwarded me last spring. Owing to various delays and especially to detention on the Roanoke, the box did

not arrive till towards the last of April. Nearly two months too late for this climate in ordinary seasons.—Most spring vegetation had long before put forth. Grape vines had been in leaf some time. I considered it doubtful whether the vines would succeed. But to make the trial, I first put them, as well as the Shepherdia and Chinese Mulberry, in a run of water, and as many as had roots being in the soft mud, I dammed up the water so as to cover all, and let them so remain for some days before planting. The Catawbas, Cunningshams, and Woodsons being all cuttings, I considered it useless at that season to put out as such; but grafted them into stocks procured from the woods and then planted. The Isabellas and H. Maderias being rooted vines, having soaked in the branch till their buds were ready to expand, I planted in the common way. The season proved favorable and they mostly all succeeded; having grown eight, ten, and a few grafted ones sixteen and eighteen feet.—Some had clusters of grapes. But owing perhaps to the latter part of the season being very dry they did not mature.

I took cuttings from the Buffalo berry tree and new Chinese Mulberry and grafted to such stocks as I thought might be congenial to their nature. None of the Shepherdia succeeded. But those twigs of the Chinese Mulberry which I grafted into the common white Mulberry succeeded very well. Indeed three of the gratis have grown eight and ten feet; some higher than the rooted twig I got from you. I tried one upon a black mulberry stock; but it did not grow. Another method of propagating this tree, which I tried did not succeed on the common black, but did on the white mulberry. I mean that of budding or inoculating. I budded one of the latter kind with a Chinese eye, and going about three weeks afterwards, to examine whether the bud was alive, and if so to remove the string, I found to my surprise, that the bud had expanded into leaves. It is now a branch on the tree. Several to whom I have showed it, have also expressed their surprise.

I have likewise this season tried budding various kinds of grape vines. But the buds, I perceive have all perished. And, as I have succeeded very well in budding peach and apple trees, as well as the white mulberry, I cannot think it was for want of skill in performing the operation, that the buds on the vines did not take. But if any others have been successful in budding the vine, I should be gratified to be informed.

I must here add, that in making wine, this season, I used for mashing the grapes, such rollers as are described by Mr. Herbmout, and that they have fully answered the purpose he named. And I will state too, that my grapes being fully ripe and some partly shrivelled, the must, when I came to test its strength with an egg, was found sufficiently strong to make wine without the addition of either sugar or brandy. I have no doubt of its keeping if due care be taken; for some I made in the same way, more than three years since, is now good wine or pronounced such by competent judges. I cannot forbear here mentioning, that, although there are trials, difficulties and discouragements, (as there are in all earthly valuable attainments,) in promoting agricultural improvements, yet those who encounter them will in due season, "reap if they faint not;" and that even those prejudices, which, through dread of novelty, often arise in honest minds against valuable new things in agriculture, or those at least, which may appear such in any section of country, will eventually give place to approval, commendation and adoption. I hope I will not be accused of egotism, when I add, that I have partly realized this in my own experience. Nearly four years since I removed to my present residence, and with very narrow resources, commenced improving my three hundred acres of nearly worn out land. Not to mention the cost and trouble of fencing and other repairs of a common kind on a farm in a state of dilapidation, I pursued a regular system of manuring, by hauling straw, pine and other leaves into my yards and lots,

and having my trash pens and other receptacles for making manure. Some, who thought my labors almost lost, seeing barren fields thereby made to produce good cotton and corn, now adopt the same plan, and consider it less trouble to make poor land productive by manure, than to clear new timbered tracts after the old system.

Some have now changed their opinion, who formerly considered me a visionary man about to ruin my affairs, because I went to the expense and trouble of buying and sowing grass seeds, made cross fences, and took my cattle out of the woods to turn them into fields, and because I fed my calves milk and gruel in pasture lots, instead of letting them remain with their dams; and not to mention new instruments of husbandry, such as harrows, rollers, skimmers, &c, because I ploughed hilly ground horizontally, and planted corn in drills; seeing my grapes flourish, my cattle thrive, and that two or three of my cows afford more milk and butter than a dozen or two of theirs, and that my calves bid fair to become superior cattle, and that my grounds produce more, and washing is prevented by the horizontal and drill system.

But my attempts to rear a vineyard, at first excited here the greatest incredulity. But few attempts of the kind have been made in this state, and if I have been informed correctly, none of consequence in the county of Halifax. And, yet a county, I believe, as to soil and climate, as well calculated for success in rearing the vine, as any in the Union. Some thought it impracticable, on my poor land to make vines flourish at all; and again, if the vines could be reared the business would be unprofitable, and if entered into any way largely, would ruin even a man of capital.

And indeed the expense of hiring, connected with this and other improvements, brought me into debt and some embarrassment. And I know not the consequence, had not Providence, who uniformly favors all laboring to avail of and make his own nature's works valuable to man, afforded me a substantial friend, in my neighbor, Gov. G. H. Burton, a gentleman of enlarged benevolence, extensive information and liberal views—for taking me by the hand, purchasing my rooted vines, and liberally rewarding me for superintending the rearing of a vineyard for him, he shared with me some of the liberal remarks incurred by the new, and here untried undertaking. But, incredulity is beginning to give place to faith, in view of the rapid growth and promising condition of our vineyards. And many that were incredulous, think now that rearing the vine will eventually be a profitable business; knowing that, independent of the expected profit of wine making, I have sold rooted vines these two years to some amount, and that (with a fair prospect of selling,) I will have a considerable number of Senpennong and other choice kinds of rooted vines to be disposed of this fall or next spring.

Here I remark, that at every step of my efforts to attain agricultural improvement, I have been more convinced, that emphatically, in agriculture, *knowledge* is, when judiciously applied *power*; or, that the more correct and enlarged the *theory or science* in this business the more efficacious and eventually profitable the *practice*. And here I must acknowledge myself greatly indebted to the pages of the "American Farmer." From which *pioneer* of agricultural periodicals, I have been constantly receiving important hints and directions. I heartily accord with Mr. Smith, (late editor of the "Farmer," in his valedictory, that the agriculturist, as well in these as in other important pursuits of life, should read much on the subject of his business. But to persuade most agriculturists to accord practically with this sentiment is a difficult task. Some indeed, I know, look upon the agricultural periodicals of the day as a sort of newly arisen *catch pennies* to gull them out of money.

And the very efforts, made by philanthropic men at the head of agricultural, as well as other printing establishments, to sustain themselves in the great expenses of the same, as well as to promote the object of

bettering the condition of man often incur the charge of avariciousness.

If some individuals are asked to subscribe for the *American Farmer* or other useful works of the kind, they look upon the proposal with almost as much suspicion as if they were solicited to buy Yankee wooden nutmegs.

Some have a notion that it is unnecessary, and of course unprofitable to read on agriculture.

I recollect that a neighbor of mine, a pretty good farmer on the old beaten plan, made an observation of this kind to me when I solicited him to take the *American Farmer*. I mentioned that one article for a year in the work, might compensate for the cost, viz. "a remedy for crows pulling up corn." He inquired what it was. I told him tarring the seed corn in a particular way. He replied he had tried tarring, and that the corn would not come up. I replied that was for want of knowing how to do it aright. In short he was incredulous and planted the usual way. The result was, that my tarred corn came up well and was uninjured by crows; while he sustained a loss of corn, I should say more than treble the value of a year's subscription for the "*Farmer*;" not to mention the loss of time of himself and hands in frightening away crows from his corn fields. But I must close.

Yours, &c. SIDNEY WILLER.

P. S. Your Quinoa or Peruvian rice has grown very luxuriantly with me. I have reason to believe it will not disappoint the expectation of any who try its cultivation.

(From the Northern Farmer.)

CULTURE OF HOPS.

We were told by an intelligent and experienced hop-grower, a few days since, after he had given us a minute account of the whole process from the planting to the coring and putting into bags, that a pound of hops could be raised with as little expense to the farmer, as a pound of pork.

He said, from his own experience, he was fully convinced, that he could cultivate, harvest and cure an acre of hops, with the same expense of labor, that he could plant, hoe, harvest and husk an acre of corn. And, that an acre of land, which would produce forty bushels of corn, would produce nine hundred pounds of hops. He remarked, that though the market price of hops was exceedingly variable, it had, he believed, never been lower than that of pork, and often four or five times higher.

It is true this crop cannot, like most others, be produced annually from the seed; but it is also true, that when once planted, it may be cultivated as a perennial plant without the expense of annual planting or seed, which constitutes so great a proportion of the expense of other products.

For the reasons, that hops produce no crops the first season after being planted; and that their price is so unsteady in the market, few farmers have been in the practice of considering them as a staple article of culture. When the price of this article is low, farmers plough up their hop yards, and when high plant new ones. In this way, the market is ever unsteady, from the alternate scarcity, and over-production of the article. Intelligent and scientific farmers, to deserve the character, should not only be able to cultivate their farms with skill, but should be able to calculate with some degree of probability, at least, the future market prices of their produce; that they may in season vary the products of their farms in such manner as to meet, most advantageously, the demands and caprices of the market.

This he may do without second sight, or a spirit of prophecy, if he has closely observed the variations of the market, for two or three, or perhaps more of the past years. Whenever an article of produce has been as low in price as it was ever known to be, it has always soon risen to its highest price again; for the very reason that the price had been low to induce the farmers generally to continue its culture. These

alternations may, therefore, be calculated with great accuracy, by the farmer, who spends his winter evenings not at the tavern, but at home, reading and laying down plans for future operations; and his leisure days in looking around him, and making such inquiries as may bring him acquainted with the extent to which any particular article of culture has been attended to, by farmers generally.

With that skill, in the culture of the article of hops which shall enable the farmer in all cases to produce the first sort, and which we are told may be easily acquired, he would, even when the article was at the lowest price obtain remuneration for all his labor; and when at the highest, actually make a profit which he could gain by the culture of no other crop.

The present season the price of hops in the market has been, in Boston, as high as twenty-five, and in New-York, as high as thirty-five dollars the hundred pounds. At the lowest of these prices the produce of a single acre of hops, (assuming nine hundred pounds to the acre) would be of the value of two hundred and twenty-five dollars; while the produce of an acre of corn, (forty bushels; at its present high price, one dollar.) would be of the value only, of forty dollars. But as hops are often very low in the market, let the farmer estimate the produce of his acre (nine hundred pounds) at six dollars the hundred only, it will then amount to fifty-four dollar, exceeding his acre of corn by fourteen dollars. If then our premises be correct, no intelligent farmer can long hesitate in determining which of these crops would be likely to produce the greatest profit, under a skilful culture for ten years.—We have, in our last estimate, taken, we believe, the lowest price of hops, while we have retained the highest price of corn.

The very intelligent gentleman above referred to, gave some particulars relative to the culture of hops, which he said could not be disregarded by the grower, without great inconvenience and loss. That to which he attached the most consequence, and on which, he said, experience had shown, that the quality of the crop primarily depended, was the picking, as soon as possible after the vines were cut—that, if permitted to remain unpicked only a few hours after the vines were severed from the root, such a change took place as would inevitably reduce them to second, and perhaps third sort. This process of deterioration, he explained, by saying that the hop was an extremely delicate plant, almost to appearances, "instinct with life;" that the vine immediately on being severed from the root, was subjected to a most rapid change—that an inverted circulation of the juices of the plant soon commenced, which in a few hours deprived the hops of their most essential virtues, and rendered them comparatively of little value.

He remarked, that with proper attention, the poles, so formidable a part of the expense in the hop-culture, might be preserved for ten or twelve years. His method was, to strip off all the vines, at the time of picking the hops, lay them up from the ground, with sticks between them, in the same manner that boards are packed for seasoning, so that the air can pass freely through them.

He concluded with the remark, that the culture of the hop, was a safe business, as at the ordinary price, it would pay well for labor; and that it had often happened, as it had the present year, when the farmer had received a greater profit from a hop-yard of one or two acres, than from all his other crops.

Botanical description.—*HUMULUS*, the hop, a genus of the pentandria order in the diœcia class of plants, and in the natural method ranking under the 53d order, scabridæ. The male calyx is pentaphyllous; there is no corolla; the female calyx is monophyllous; patent obliquely, and entire; there is no corolla, but two styles, and one seed within the calyx, the latter consisting of one large leaf. There is only one species viz: the lupulus, which is sometimes found wild in the hedges near houses and gardens, but probably is not indigenous; [in Britain.] The stalk

is weak and climbing; it creeps up the support in a spiral, ascending always from the right hand to the left.

History.—Hops are said to have been first brought into England from the Netherlands, in the year 1524. They are first mentioned in the English statute-book, in the year 1551; and by a statute of the first year of James I. anno 1601; it appears that hops were then produced in abundance in England. "The hop being a plant of great importance, we shall," says an English writer, "consider what relates to the culture and management of it under distinct heads."

Of Soil.—As for the choice of soil, the hop-planters esteem the richest and strongest ground the most proper; and if it is rocky, within two or three feet of the surface, the hop will prosper well, but they will by no means thrive on a stiff clay or spungy wet land.

To Plant Hops.—In the winter time, provide your manure for the hop-ground against the following spring. If the dung is rotten, mix it with two or three parts of common earth, and let it incorporate together till you have occasion to make use of it in making your hop-hills; but if it is new dung, then it is to be mixed as before till the spring in the next year; for new dung is very injurious to hops.

Hops require to be planted in a situation so open, as that the air may freely pass round and between them, to dry up and dissipate the moisture, that they may not be so subject to fire-blasts, which often destroy the middle of large plantations, while the outside remain unburnt.

The hills should be eight or nine feet asunder, that the air may freely pass between them. If the ground is intended to be ploughed with horses between the hills, it will be best to plant them in squares, checkerwise; but if the ground is so small that it may be best cultivated with the spade, the holes should be ranged in the quincunx form.—Which way soever you make use of, a stake should be stuck down at all the places where the hills are to be made.

Farmers should be very particular in the choice of the plants, as to the kind of hop; for if the hop garden is planted with a mixture of several sorts of hops that ripen at several times, it will cause a great deal of trouble, and be a great detriment to the grower. The two best sorts are the white and grey bind; the latter is a large square hop, more hardy, and is the more plentiful bearer, and ripens later than the former. There is another sort of the white bind, which ripens a week or ten days before the common; but this is tenderer, and a less plentiful bearer; but has this advantage, that it comes first to market.

If you have a sort of hops you highly value, and would increase plants and sets from them, the superfluous binds may be laid down when the hops are tried, cutting off the tops, and burying them in the hills; or when the hops are dressed, all the cuttings may be saved; for almost every part will grow, and become a good set the next spring.

As to the seasons of planting hops, the month of October and April (May in the Northern parts of New-England) are best approved of. The most usual time, however, of procuring sets, is in April or May, when the hops are cut and dressed.

As to the manner of planting the sets—there should be five good sets planted, in each hill, one in the middle, and the rest round about, sloping.

Dressing.—This operation should be performed in the spring as soon as the ground is sufficiently dry, and before the stock begins to put forth branches. The most favorable time in New-England for this operation is generally from the middle of April to the beginning of May. Having cleared away the earth out of the hills, so as to lay bare the stock to the principal roots, (observing great caution not to break or wound the roots) with a sharp knife, cut off all the shoots which grew up with the bind the last year; and also the young suckers, (if any have already started,) that none be left to run in the alley and weaken

the hill. It will be proper to cut one part of the stock lower than the other, and to cut that part low that was left highest the preceding year. In dressing hops that were planted the year before, you ought to cut off both the dead tops, and the young suckers which have sprung up from the sets, and also to cover the stocks with line earth, a finger's length in thickness.

The Poling.—About the latter part of April the hops are to be poled, when the shoots begin to sprout up. The poles must be set to the hills deep in the ground, with a square iron picker or crow, that they may the better endure the winds, due caution being observed not to injure the principal roots: three poles are sufficient for one hill. These should be placed as near the hill as may be, without injury to the roots, with their bending tops turned outward from a perpendicular position, to prevent the binds from entangling; and a space between two poles ought to be left open to the south to admit the sun-beams.

The Tying.—As to the tying of hops, the binds that do not clasp off themselves to the nearest pole, when they are grown to three or four feet in length must be guided to it by the hand, turning them to the sun, whose course they will always follow.—They must be bound with withered rushes, but not so close as to injure them by the tightness of the ligature. This you must continue to do till all the poles are furnished with binds, of which two or three are enough for a pole; and all the sprouts and binds that you have no occasion for, are to be plucked up; but if the plantation is young, then none of these useless binds should be plucked up, but should be wrapped up together in the middle of the hill.

Gathering.—About the beginning of July, hops begin to blow, and will be ready to gather about Bartholomew-tide, (24th August.) A judgment may be formed of their ripeness by their strong scent, their hardness, and the brownish color of their seed. When by these tokens they appear to be ripe, they must be picked with all the expedition practicable: for if at this time a storm of wind should come, it would do them great damage, by breaking the branches, and bruising and discoloring the hops; and it is very well known that hops being picked green and bright, will sell for a much higher price, than those which are discolored.

The most convenient way of picking, is into a long square frame of wood called a bin, with a cloth hanging on tenter-hooks within it, to receive the hops as they are picked.

The hops must be picked very clean, i. e. free from leaves and stalks; and, as there shall be occasion, two or three times a day the bin must be emptied into a hop-bag made of coarse linen or hempen cloth, and carried immediately to the oast or kiln in order to be dried; for if they should remain long in the bin or bag, they will be apt to heat and be discolored. If the weather is hot, there should no more poles be drawn at a time than can be picked in an hour, and they should be gathered in fair weather, if it can be, and when the hops are dry; this will save some expense in firing and preserve their color better when dried.

Drying.—The best method of drying hops is with charcoal, on an oast or kiln, covered with hair cloth; of the same form and fashion that is used for drying malt. There is no need to give any particular direction for making these, since every bricklayer in those countries where hops grow, know how to build them. The kiln ought to be square, and may be ten, twelve, fourteen or sixteen feet over at the top, where the hops are laid, as your plantation requires, and your room will allow. There ought to be a due proportion between the height and breadth of the kiln and the beguils of the steddle where the fire is kept; v. z. if the kiln is twelve feet square on the top, it ought to be nine high from the fire, and the steddle ought to be six feet and a half square, and so proportionate in other dimensions.

The hops must be spread even upon the oast, a foot thick or more, if the depth of the curb will allow it; but care is to be taken not to overload the oast, if the hops are green or wet. The oast ought to be first warmed with a fire before the hops are laid on, and then an even steady fire must be kept under them; it must not be too fierce at first, lest it scorch the hops, nor must it be suffered to sink or slacken, but rather be increased till the hops are nearly dried, lest the moisture or sweat which the fire has raised, fall back and discolor them. When they have lain about nine hours, they must be turned, and in two or three hours more, they may be taken off the oast. It may be known when they are well dried, by the brittleness of the stalks, and the easy falling off of the hop-leaves.

Bagging.—As soon as the hops are taken off the kiln, lay them in a room for three weeks or a month to cool, give, and toughen; for if they are bagged immediately, they will powder, but if they lie a while [and the longer they lie the better, provided they are covered close with blankets to secure them from the air.] they may be bagged with more safety, as not being liable to be broken to powder in treading; and this will make them bear treading the better; and the harder they are trodden the better they will keep.

(From the Mass. Agric'l Repository.)

STIRRING THE EARTH A RELIEF AGAINST DROUGHT.

This is a trite subject, and one, which we are aware has been long since settled by intelligent cultivators in all countries. It is very familiar to gardeners, and the cause of the very superior productions of gardens over field culture may be attributed in part to the more frequent application of the hoe and spade. Yet it is true, that a very great number of farmers deny the proposition, and disapprove the practice. They think it dangerous to plough and hoe, in the time of extreme drought and heat, while our own experience of twenty years has convinced us, that it is much superior as a remedy, against drought, than watering in the limited manner, in which that must always be applied.—There has never been a season in our memory in which there was greater necessity for the application of all remedies against drought than at present. The drought was not only of longer duration, but it took place when plants were the least able to resist it, not having sent their roots in quest of nourishment far wide, and deep. The early foliage, also is more liable to wilt under a scorching sun or drying wind. In this extraordinary season, I had a small patch of early potatoes planted in a warm and sandy soil, purposely to procure an early crop: the soil was, at least three-quarters pure sand, mixed with some loam for plants among the sand. The severe drought threatened a total loss of the crop. The potatoe stalks were feeble, drawn up scarcely larger than goose quills, and I expected every day to see them wither; all hopes of a crop were abandoned. I thought they were the fair subject of a desperate experiment. On one of the hottest and driest days, I gave them a thorough ploughing, passing the plough four times through each row: first ploughing two furrows from the hills, as near the roots as possible, without throwing out the seed potatoes, and then returning the loam, or earth, instantly back by two other furrows. No rain intervened for ten days. In three days after the potatoes changed their color, they started afresh as if they had received the benefit of ample showers, while not a drop of rain had fallen.

The dews, which were abundant, settled upon the new turned earth, while before the ploughing, no moisture had been apparent.

The last fact though it cannot have escaped the notice of the most careless cultivator, has not been as yet explained. We can easily see, that a soil rendered porous, would more readily and easily convey its moisture to the roots. It becomes like a sponge, and is readily permeable, or rather readily permits the moisture to

pass between the particles. But it is not yet understood why it attracts the moisture. Perhaps however, it may be owing to its presenting a much greater surface to the moist air of the night. The fact, however, which is what most concerns us, is settled. Perhaps some of the experiments of our distinguished countryman, Dr. Wells, a physician of London, who rendered himself distinguished by his remarks on dew, may tend to explain this fact, though it is not my purpose to examine the theory.

Every man who feels an interest in the question, can satisfy himself, at once, by stirring a small piece of earth in time of severe drought, and if he does not find it in the morning more filled with moisture than the undisturbed ground in its vicinity, let him continue a disbeliever.

But there is another mode, and it is one which I have never seen suggested, by which I apprehend the stirring of the surface, and making it light and porous, is beneficial in great droughts. It is this: light porous bodies are bad conductors of heat: perhaps because they have more air between their interstices.—The facts are familiar to us. Metallic bodies acquire an intense heat, under the rays of the sun, so do stones in proportion to their density. The earth when very compact, will become exceedingly hot, but garden loam which is very porous, remains cool at noon day, two inches below the surface. I believe, therefore, that moving the surface, and keeping it in a light and porous state, enables it to resist the heat of the sun's rays, that the air between the particles of earth communicates the heat more slowly than the particles themselves do, when in close contact.

Such is my theory: but a an enemy of theories; I always distrust them, I look only to facts; and having observed that a slight covering of half an inch of seaweed would preserve my strawberries from drought, which can only arise from its lying so close on the surface, I have been led to infer, that the undoubted fact, that the soil in a loose pulverized state resists drought, is owing to the same cause, to wit, the slowness with which the heat of the solar rays is communicated to the roots. But be the theory sound or unsound, I am persuaded that every farmer will find that the free use of his plough and hoe, in times of severe drought, will be of more value to him, than as much manure as that labor would purchase. I have been always convinced, from my experience as a horticulturist, that the great secret in cultivation consists in making the soil porous. In raising exotic plants, we know it to be true, and our flower pots are always supplied with soil, the most porous which we can obtain. The farmer may borrow light from an occupation which he looks upon with disdain, but which elucidates and explains the secrets of vegetation. J. L.

(From the Bucks County Intelligencer, of 1831.)

ORCHARD GRASS.

The most eligible time for sowing the seed of orchard grass, I am induced to believe, is as early in the spring as the state of the ground will admit, and as clover is the best adapted to the growth of this grass of any with which I am acquainted, they may be advantageously sown together. I have usually sown clover seed at the rate of four quarts per acre, and afterwards followed with orchard grass with one bushel on the same quantity of ground. This plan has been preferred from a knowledge of the fact, that the latter grass does not generally advance as rapidly as clover, (it not seeding the next season after sowing,) but there is always sufficient of the blades, if the seed takes well, to improve very much the quality of the clover hay. The succeeding season the orchard grass occupies much more space, gradually increasing as the clover declines. The experience of the growers of this grass has shown that the crop improves for at least seven years. Unlike timothy and red top, the bulk of the grass consists in the blades, and of course, when the top is cut for seed, the value of the crop for hay is not much lessened, the part usually cradled

being of comparatively small value; but after the seed is gathered, it does not, like the grasses just mentioned, become dead and dry, but continues green and in a suitable state for cutting during several weeks. I have this season mown the stubble which had been standing more than four weeks, and the larger part of it furnished hay of very good quality; on the other hand I have observed several patches of timothy and herd that have been cut for seed; the stubble of which would not be worth gathering for any thing but manure.

In sowing the seed of this grass, especial care should be taken to distribute it evenly over the ground, it being light, (weighing but about fifteen pounds per bushel,) and easily acted upon by the winds. On an eight pace land four casts should be sown, the sower scattering seed with every step. But it should not be mixed with clover or any other heavy seed, as the difference in weight will vary the extent to which a cast will reach. With respect to the quantity of seed per acre, those who sow with a view of making it the sole object, would probably consult their interest in sowing one and a half or two bushels per acre; but one bushel sowed in the manner above mentioned, has been productive of a profitable result, both as respects the improved quality it has imparted to the hay, as well as the seed it has afforded. The appellation of *orchard* has been given to this grass, from its known congeniality with shade. I have known very luxuriant crops to grow in an orchard, producing three cuttings in a season, although the trees were large, and almost entirely shading the ground; but in such situations it will not produce seed.

The fertilizing quality of this grass was formerly mentioned, and it may probably be attributed to the circumstances of its shading the soil more effectually than most other grasses, excepting clover. If a field of it should be kept for mowing, there will be very little time during the warm weather in which the grounds will not be protected from the heat of the sun, and if for pasture unless it be too heavily stocked, the soil will be shaded by a sufficient covering of this luxuriant grass.

It may be mown for hay at any time best suited for cutting the clover with which it grows; but if it is designed to save the seed, the mowing must be deferred till towards the last of June, at which time the seed will be ripe. This should be cradled before it is ripe enough to waste, bound in small sheaves, and shocked in rows. The stubble may then be mown immediately, or to suit the convenience of the farmer, the seed requiring some exposure to the weather to render it in a suitable state for thrashing.

Discovery of Indian Corn.—Previously to the settlement of the Puritans in New England, they formed parties for exploring the country. Captain Miles Standish, who may be called the hero of New England, commanded one of them, consisting of sixteen men. In their progress they met with several small hillocks, supposed by them to be burial places for the Indians; but, as they advanced, finding many more, they closely examined them, and discovered that they contained INDIAN CORN. Being buried in the ear, it excited their curiosity, and by some of the party it was thought a valuable acquisition; while others, who ate it in a raw state, did not relish it, and thought it worth little or nothing. They secured, however, some for seed in the ensuing spring.—Squanto, a friendly Indian, instructed them in the culture of it, and it was, probably, the means of saving them afterwards from famine.

Saving Knowledge.—Instead of cutting off the whole head of a cauliflower, leave a part on, the size of a gooseberry, and all the leaves; second and even third heads will be formed; but by the present practice, by cutting the head off completely, the bed of cauliflowers is gone in two or three weeks.

HORTICULTURE.

THE WORM.

[We give place, with pleasure, to the following communication. We were about writing an article on the subject ourselves, when it came to hand, and politely saved us the trouble. Our friend, M. A. will please accept our thanks—and we take occasion here to state, that we wish we may have to return thanks to many of our subscribers and readers for similar favors.—*Ed. Am. Farmer.*]

Mr. Editor,—In your paper of the 18th inst. you inserted, from the Richmond Enquirer, an article headed "Fine Fruit," near the end of which, the writer, alluding to the worm which destroys the peach tree by cutting it near the root, says: "It is generally believed, that if hogs are suffered to run at large in the orchard, or if the trees in the garden or yard are paved round, the curculio (the insect which produces the worm) will be arrested in its ravages." It is something new (to me, at least,) that the curculio and "the insect which produces the worm" in question, are one and the same thing. I had always been taught to believe differently, and do still think I am in the right. The curculio is certainly the insect which attacks the smooth skinned stone fruit as well as the apple and pear, by depositing in the young fruit an egg, which becomes a worm, and most frequently causes the fruit to fall off before maturity. Its greatest ravages are on the plum, apricot, and nectarine.—The peach does not suffer so much, being defended by the down on its skin. When the fruit falls, the worm makes its way into the earth, where it undergoes its various changes, and the following year it comes forth a small winged insect of the beetle kind, which ascends the trees and begins to deposit its eggs in the fruit. Hogs are of service by devouring the fruit and insect before the latter has time to secrete itself in the earth. It is also useful to pave the yard or garden around the trees, because then the insect cannot penetrate into the earth, and perishes for want of its natural asylum, besides being liable to destruction from a thousand accidents. But the worm which eats into the root and lower part of the stem of peach trees, is a very different affair. If you turn to Kendrick's New American Orchardist, p. 238, you will find the following account of it, and several modes of preventing its attacks.

"The worm is produced by a fly which, from the middle of June, to the first of August, deposits its eggs on the bark of the tree, generally at its root, where the bark is tender. These are soon hatched, and the worm shortly penetrates beneath the bark, where it commences its work of destruction, devouring the sap-wood often around the whole circumference of the tree, causing the gum to exude, and often death.

"Much has been written and said of this insect; yet the prevention is very easy, provided there is a necessity for it, which is not the case in all soils and situations. It seems with us only an occasional evil, and the remedies are seldom required. Whenever serious suspicions arise, let every tree be carefully searched at the surface of the earth, and the worm destroyed by probing with a penknife or pointed wire. About the beginning of June, form around the trunk of the tree a small conical mound, to the height of eight inches or a foot above the natural surface of the earth. Unleached ashes, which might be preserved for this purpose, are without doubt the best and most useful substance, and each tree will require about a peck.—But any thing else, even soil, is found to answer.—The design of this is, to protect that portion of the tree where the bark is most tender; let this mound be levelled in October, and the bark will harden again beneath where it was placed. I am inclined to believe the potash wash before described, would answer every purpose, as it does with the apple tree if applied

at the suitable time; also the wash recommended by Mr. Lindley. The *Garden Compound*, sold by Messrs. Russell of Boston, and Ives of Salem, I am persuaded would be effectual. Also *coal tar*. A gentleman of Nantucket is trying the coal tar with his peach trees. He is also trying it on the plank of his ships which sail to the Pacific, to preserve them from the attacks of the sea worm; the odor it exhales is powerful and lasting.

"Another cheap, easy and effectual mode is practised by Mr. Vose of Dorchester. About the last of May, the soil is removed to the depth of two inches round the trunk; a composition of clay, ashes, &c. is applied with a brush, and over this stiff brown paper is wrapped around the tree to the height of a foot, and the earth replaced. Mr. Ellis, of New Jersey, has found that rye straw bound round the trunk from the surface upwards is effectual; and Mr. Wilson, of New York, in his *Economy of the Kitchen Garden*, has recommended grafting clay to be applied round the trunk. Lime mortar mixed with sulphur is found good."

Now, Mr. Editor, if these few disjointed remarks be thought of any utility, they are at your service.—But I would beg leave, at all events, to suggest the propriety of correcting a statement which might puzzle some inexperienced hand, and give him an erroneous idea of these insects, which agree, I believe, only in one particular, that, viz. of doing all possible injury to our fruit trees.

I am, sir, with great respect, your obdt serv't.

M. A.

Grapes worth having.—There was some marvel concerning the grapes which the spies brought to the camp of Israel, but modern travellers say that the valley of Eschol produces bunches which weigh from ten to twelve pounds. A German traveller (Schutze,) says, "a cluster of grapes, two or three feet in length, will give an abundant supper to a whole family."—The vines of course must be immense. The Black Hamburg (of which specimens were shown in the Horticultural Rooms,) have grown so prodigiously in England, as to cover, in some cases, nearly 1800 square feet of ground. One at Hampton Court is mentioned in Williams' Vegetable World, as bearing regularly about 2000 clusters, weighing a pound each on an average. Vine stalks in Persia and Palestine not unfrequently attain the enormous diameter of from one to two feet.—*Boston Mer. Adv.*

[There is, or was last year, a grapevine, not far from Lexington, on the side of the Frankfort road, which measured more than a yard in circumference six feet from the ground.]

On a method of preventing the attacks of Caterpillars.—At the season of the year, says Mr. Brown, of Pinefield, when caterpillars generally attack fruit trees and bushes, the following method of preventing their attacks may not prove undeserving of notice. Let a hole be bored in the stem of a tree, as far in as the heart, in a direction sloping downwards, about a foot from the ground. Into this hole pour a little mercury. Close up the hole with a peg, not very tightly fitted in. Cut the top of the peg smooth with the bark of the tree or bush, and then put a little tar over it to prevent water getting into the hole. This I have found a safe and sure method of not only preventing attacks of caterpillars, but of driving them off the tree; and it is not yet, I believe, publicly known.—*Quarterly Journal of Agriculture.*

A hog is now exhibiting in Albany, which was raised in Warren county, Ohio, and is believed to be the largest in the United States. He is nine feet in length, four feet eleven inches in height, measures eight feet three inches round the body, and his weight is fourteen hundred pounds! He is of the Russian breed, and is three years and four months old.—*Litchfield Enquirer.*

RURAL ECONOMY.

(From the Kanawha Farmer.)

GOOD BACON.

Good bacon is so important an article in a Virginia family, that I am induced to offer to young housekeepers and others not practised in preparing and preserving it, the following directions; by the observance of which I think their bacon will do credit to their tables.

Hogs, weighing from one hundred and fifty to two hundred, are to be preferred, and they should be corn-fed, for at least five or six weeks. Corn-fed pork may be distinguished by the appearance of the kidney-fat, as it will be hard, and crack into small squares like beef suet; those should be avoided whose fat is more tenacious and inclined to transparency, adhering to the fingers, and bearing the complexion of lard.

The salt should be of pure quality; that taken from the kettles when somewhat more than half boiled down, or found in the pans after cooling is most to be relied on.

To every thousand lbs. of meat, put three pecks (by measure) of salt, with which a pound of pulverized saltpetre has been previously and thoroughly mixed. This composition is to be well rubbed on, and then sprinkled thickly on the outside of the meat. There is no danger of oversalting from quantity; it is length of time which has that effect.

The meat is now to be laid with the skin side down in good casks or troughs, with salt sprinkled over the bottom; the hams and shoulders first, and then the middlings and small pieces. On the fourth or fifth day the meat should be taken up, and again well rubbed with salt, to which should be added, whenever it can be procured, a teaspoonfull of powdered garden pepper to each place; and the meat replaced as before, after removing any bloody brine, or other impure matter that may have collected in the troughs or casks. At the end of two weeks, if the meat is kept without freezing, all the pieces except the hams and shoulders will be salted sufficiently, and should then be removed, at which time the remaining pieces should be repacked, placing those which appear least salted, lowest down. A change of position is absolutely necessary, because the pressure will prevent the passing of the brine through the meat, if not turned.

In three weeks from the first salting the shoulders are to be removed, and in four weeks, the hams.

To make good bacon, the meat should be hung with the thickest part upwards, to prevent the exudation of its juices, and each piece clear of the wall, or other pieces, and there left until it is quite dry. Some sound chips, with a few billets of hickory wood, or corn cobs, make the best smoke, and also keep the house warm, which is important; for if the smoke-house is cold, all former cure will be in some measure lost; a damp will settle on the bacon, and it will have a bitter flavor. Bacon should never be smoked in damp weather, as is too often practised, as by it the meat gains nothing in color, but acquires a bad taste, one or two good fires each day, will smoke the pieces, in precisely the same time required for salting; that is to say, hams four weeks, shoulders three weeks; and middlings and other pieces two weeks.

I have used red pepper with, I think, decided advantage, by throwing a few pods into each fire while smoking, this article, in salting or smoking, or in both, improves the flavor of the meat, and tends to secure it against insects. If the meat house is dark and cool, the meat may be left hanging until wanted for use; but if otherwise, it should be taken down at the commencement of warm weather, and packed away in salt, clean hickory ashes, or oats; either will secure it from insects, or dripping, if the meat be entirely covered over, and the interstices between the pieces properly filled. The use of dry salt will not increase the saline flavor of the meat. I have known bacon

very finely preserved, by preparing a strong ley of wood ashes, concentrated by boiling, into which, when cold, the pieces were dipped.

The alkali and the oil of the meat, forms a coating of soap in all the crevices, as well as on the surface, which is an admirable protection against the insect tribe.

Some attention should be paid to the construction of the smoke house. As before observed, it should be rendered warm during the process of smoking, and it is to retain the meat through the season, should be cool, dry and dark. A brick stove in the centre of the floor, with openings for the escape and ascent of the smoke in the sides, is among the best contrivances usual among us; but this becomes heated, and does not entirely obviate the danger arising from the occasional falling of the meat, by which houses are not unfrequently burned. It will probably be more safe and convenient to build a chimney, with a very low fire-place, as for a sitting room, and when the chimney is carried up four feet close it at the top. A small grate placed a few inches from the hearth, will assist the burning of the wood. By having a chimney thus constructed, the blaze of the fire can never injure the house or meat, no pieces can fall into the fire when a string or nail gives way and whilst the blaze and smoke ascends the blind chimney, the smoke must descend again and pour into the smoke house. This plan is highly recommended for its safety and convenience, by a gentleman whose advice is entitled to great respect; and to whom I was originally indebted for several of the directions here given, the value of which I have verified in the course of my own experience.

AN ADMIRER OF GOOD BACON.

TO RESTORE FROSTED POTATOES.—A most effectual method has been discovered by a Cumberland gentleman. It is simply to allow the potatoes to remain in the pits, after a severe frost, till the mild weather has set in for some weeks and allowing them to recover gradually. If once exposed to the atmospheric air, no art will recover frosted potatoes.

MISCELLANEOUS.

LAFAYETTE COLLEGE.*

Since our last No. went to press, we have had the pleasure to receive the "Second Annual Report of the board of trustees of Lafayette College," as promised by the president in his letter published last week. The perusal of the report has afforded us much gratification, and we take pleasure in again calling the attention of our readers to the subject.

The report is made up of an introductory exposition of the principles and objects of the institutions, an account of proceedings for the previous year and a statement of the plans of the board for the future, and an appendix, which contains a statistical table showing the names and residences of the students, the amount charged them individually for their tuition, &c. their "estimated" and "actual" allowances for labor, and a graduated scale of merits both in labor and study. The appendix further contains a list of work done in the institution, the course of studies, the terms, and the names of those who compose the faculty and board of trustees. We cannot do better than present a few extracts from the report with the terms, again recommending the subject to the serious consideration of our readers.

"Lafayette College is designed to bring the higher branches of education within the reach of youth in the humbler walks of life, even where indigence has travelled;—To elevate the standard of common school instruction, to secure health to the student, to promote the feeling of honorable independence—and, to cement

*This article was intended for our last week's paper, but was unavoidably crowded out. The No. referred to, is No. 32.

the extremes of society together, and so promote the permanent well-being of the happiest nation in the world.

"As to the first of these objects, viz: opening the halls of science to those in the middle and lower walks of life; we propose to accomplish it, not by an agrarian law, not by a poor rate system, not by lowering the standard of education; but simply by affording to the industrious and talented youth, an opportunity by the labor of his hands at some productive branch of business, to become the maker of his own fortune and the promoter of his country's honor and prosperity.—The time and force expended usually in play for needful exercise, thus becomes available for his partial support. This throws open the door of competition in the learned professions to many who could not otherwise engage in literary pursuits and scientific labors.

"As to elevating the standard of common school instruction, we propose to effect it by training teachers to that business as a profession. This is all important to our country and its free institutions. Virtue in the mass of the people, is the basis of our political system, intelligence and religion the basis of virtue. Let the foundations be destroyed and the superstructure must fall. Let religion, intelligence and virtue pass away from the body of the people, and the walls of the temple of our freedom, though cemented by the blood of our fathers, must crumble to the ground. But let common schools disseminate the light of intelligence and the love of virtue over the whole land, and the glorious structure will rise higher and higher, in beauty and grandeur, commanding the admiration and love of all the friends of freedom, and exciting the envy and terror of its foes."

We must concur with the report in the justness of a remark concerning the cause of the unprofitable and inefficient condition of common schools. "Incompetent teachers, very frequently, receive inadequate support; and the inadequacy of the support secures and perpetuates the incompetency of teachers. The laborer is rewarded, small as is his reward, beyond the value of his services, and the employers are not qualified to detect the imposition." This difficulty will be removed by the plan proposed in the report of training "teachers to that business as a profession." This is the grand point: it is a profession which calls for the exercise of as much skill, as much tact, as much acute discrimination and patient investigation as any other profession under the sun. To say nothing of the necessity of teachers possessing that knowledge which they are called upon to communicate to others, there is another qualification which is in fact the principal thing—viz. the art of communicating instruction and governing a school. Yet this is a point almost wholly overlooked. Were it not melancholy to reflect on the manifest danger to the moral and intellectual welfare of our youth, arising from the practice, it might excite our mirth, to see the facility with which men grow up into teachers.—Some destitute personage, who has been disappointed in his speculations or plans, who "to dig is not able," and who "to beg is ashamed," after small deliberation sets up for a schoolmaster. In many instances it needs but a vacancy some where and the ceremonial of an offer, to entrust him with the guidance of the youth of the village in the paths, which, perhaps, the worthy teacher, has never trod himself. Perhaps he can read—"after a fashion"—he can write too, "a very fair hand"—but then some kind friend must furnish the "grammar and spelling"—he has also a knowledge of "figerin and sighterin;" but is he a man of sound sense and decision of character? has he ever studied *men*, or rather, has he ever studied *boys*, (the two studies are more different than some might suppose)—is he a man of nice discrimination to distinguish among the many varieties of character which must come under his observation? has he tact and skill to treat his pupils as their respective and varying characters and dispositions may require? These are

points of the highest importance, and these are points which are scarcely ever objects of inquiry or investigation by employers. It is thought that he is a sufficiently good schoolmaster, if he be rigid, and appear to be always active—on his part, therefore he will act up to the good old rule—he will not spare the birch, and occasionally he will treat the little boys, as Irving (if he we mistake not), expresses it, “to a touch in the rear, to help them over the big words.” And why should he not? all that he knows, had perhaps been flogged into him at school, and it is but fair that “every dog should have his day.” And this, forsooth is a teacher; one to whom, is to be entrusted the formation of the hearts and the improvement of the minds of the “rising generation!” But to proceed with our extracts:

“3. The preservation of health.—All experience has shewn the correctness of the adage, “Much study is a weariness to the flesh.” Health is often sacrificed at the altar of science. To be pale-faced, emaciated and feeble, is an important item in a student's college credentials. And under this absurd idea, many a noble youth has been educated at colleges, just to graduate and die. Or, if death should not prove to be the seal of his diploma, he draws out a miserable existence, suffering sometimes in a single day more than the pains of mere animal death. The cholera, fearful a scourge as it is, brings not in its train so large and fearful a catalogue of miseries as are experienced by that numerous and unhappy class, who have sold health for learning.

Now the system we advocate largely forestalls this evil. Another year's experience confirms our confidence in the sovereign efficacy of this prophylactic remedy. Regular, daily, systematic exercise secures health of body, and by necessity, health of mind. Seditary disease is unknown in our institutions; unless indeed it be imported, and even then it is neither infectious nor contagious.

“4. To promote a feeling of honorable independence: It is obvious that the provisions of our laws, relative to “the education of the poor gratis” operate a most unhappy influence upon this feeling. It wounds something which we are reluctant to denominate pride. Let this feeling be often wounded and it will die; and with it will die the independence of our country. For if the people lose individually, that high sense of honor, which prompts to vigorous effort for self-support and self-education—if they learn to lean on resources entirely foreign to themselves, they must soon lose it in a national point of view and become willing to lean on a foreign arm. But if a youth prosecuting study, acquires also a trade, by which, if providentially called to it, as was the great Apostle to the Gentiles, he can maintain himself; and if he at the same time, contributes materially to his own maintenance, it is evident he must acquire a consolidation—a solidity of character which must render him a valuable member of society.

“5. With these views of the bearings of our plan, it is easy to see how it must operate in cementing the extremes of society together. The sons of the indigent and of the wealthy meet together in the duties of the field, the garden and the shop, and also in the labors of the study and the recitation rooms. There is a perfect equality. All labor and all study. They learn to esteem and love each other. They form intimacies which pass down through life, with recollections sweet “as the memory of joys that are past.” They meet, perhaps, after years of separation, in the higher fields of professional labor; in the halls of legislation, or the sacred assembly.

“Another way in which this influence is operated, is, by the school-teacher's acquiring his professional attainments in the college classes; and forming his acquaintances and attachments there. He thus constitutes a connecting link between the School and College, and promotes the interest of both, whilst he furnishes pupils for the one and teachers for the other.

“Still a third mode in which this system tends to

union is, by breaking down the aristocratical notion that manual labor is inconsistent with high literary attainment and refinement of manners. The feeling undoubtedly has existed, and to some extent does exist, that to be able to handle the farmer's implements or the mechanic's tools, is derogatory to professional dignity and degrading to classic purity. Nor is this feeling confined to those who have been immured within the wall of a college. Many engaged in mechanical pursuits, entertain the same opinion; and accordingly regard the votaries of learning and science with feelings of envy and jealousy. Now there can hardly be conceived a more effectual method of suppressing such feelings, than the one we propose. Let literary men pursue this rational mode of exercise for the security of health, and they will at the same time create a fraternal feeling in the minds of those whose occupations they thus practically honor, and break down the barriers which must otherwise exist to the prejudice of the social body.”

The statistical table informs us, that during the past year, (ending Oct. 7, '33,) there had been instructed eighty-one pupils—of whom, 14 were day scholars—15 temporary students, “having views to specific objects, such as book-keeping, surveying, &c.” Fifty-two only are enrolled as being the only permanent students.

The articles manufactured, are as follows: In the mechanical department which has recently been provided with a horse machine to facilitate sawing, were manufactured:

	ARTICLES MADE.	
Dry good boxes,	- - -	760
Hut do,	- - -	54
Book do,	- - -	110
Candle do,	- - -	128
Trunk do,	- - -	110
Total of boxes,	- - -	1162
Ploughs,	- - -	26
Cultivators,	- - -	7
Horse Rake,	- - -	1
Harrow,	- - -	1
Wheelbarrows,	- - -	4
Book Case,	- - -	1
Desk,	- - -	1
Washstand,	- - -	1
Boards dressed for College building,	15,000 feet.	
Sash for College,	- - -	218 lights.

FARM WORK.

The farm work done as follows:

Lime hauled and spread,	- - -	1,145 bushels
Manure, do,	- - -	120 loads.
Oats cultivated,	- - -	4 acres.
Winter Crops,	- - -	21 do.
Corn,	- - -	8 do.
Potatoes,	- - -	2 do.
Hay,	- - -	11 tons
Garden vegetables,	- - -	

In the course of studies, besides the languages, we notice, Algebra, Geometry, Plane Trigonometry, Spherical do. Surveying, Mensuration, Book-keeping, Natural Philosophy, Mineralogy and Botany.

* Terms—Winter Session of Twenty-four Weeks

For Tuition,	- - -	\$45 00
do, in the English branches (preparatory school),	- - -	10 00
Lodging, use of Tools and Shop room,	- - -	5 00
Boarding, \$1 50 per week,	- - -	36 00
Total for tuition, boarding, lodging and shop room for 24 weeks,	- - -	\$56 00

*. The above in advance.

From which the Student may deduct by laboring three hours per day, one-fourth or one half.”

We hope our readers will not think we have devoted too much space to this notice of (we think) a valuable institution. We are pleased with the plan

and objects of it as stated in the report and in the president's letter published last week.” Yet if we may be permitted to offer one word of advice to those who watch over its welfare, we would say, “beware of making the inculcation of sectarian principles a part of your course;” this is the rock on which so many institutions have split. They have not perhaps altogether fallen, for that body of men of whose creed they had become the champions, would make it a point of honor to support them; but their arm of power has been shortened; they have ceased to exert an influence on the community at large, and to be productive of that benefit to the public for which they were originally designed. They are no longer public foundations—they have degenerated into mere sectarian institutions, devoted to the support of some particular creed. Let it be remembered, that there are always men enough, who are ready to adopt the pithy definition which says, “Orthodoxy, is my doxy and heterodoxy, is every other man's doxy,” and these men will be equally ready to denounce such institutions as “nests of heresy and schools of damnable error.” Let the Managers of Lafayette College steer clear of this dangerous rock and they will merit that public confidence which they will infallibly forfeit by a contrary course.

An extensive manufactory, for the purpose of extracting oil from cotton seed, has recently been erected at Natchez, Miss. The experiment, so far, has been attended with complete success. A bushel of cotton seed yields about two quarts of oil, and about two thousand gallons per day are manufactured at the establishment. This oil, it is thought, will answer the purpose of flax seed oil in painting, and when refined will also burn in lamps as well as the best sperm oil. The cake is also considered excellent food for stock. Should the cotton seed oil prove to be a good substitute for the linseed oil, which for several years past has been selling at high prices, on account of its scarcity, it will convert an article which has heretofore been deemed almost entirely useless, into an immense source of profit to the cotton planters.—*Phil. Gazette*

(From the Manufacturers' and Farmers' Journal.)

THE RHODE-ISLAND AGRICULTURAL, MECHANICAL AND CLASSICAL SCHOOL.

The American Farmer, published at Baltimore, some time last summer, put forth the inquiry whether there was in this country, such an institution as an Agricultural School. Since that time we have endeavored to obtain information concerning the school under the direction of the Rhode-Island Agricultural Society. The most definite we have heretofore obtained was embodied in the account of that Society's annual Fair, which the American Farmer noticed and copied. We are now enabled to communicate some additional particulars concerning the system of labor and instruction which has been adopted in this novel and useful institution. The School, which commences its winter term on Monday, the 23th October, is now under the direction of Mr. Drury, as Principal, assisted in the English Department by Mr. Alden, a distinguished instructor from Northampton. The mechanical department will be under the superintendence of Mr. Alden, assisted by Mr. Reynolds and Mr. Partridge, both practical mechanics. The hours of labor will be from 2 1-2 to 4 1-2 o'clock in the afternoon of each day. The school hours are from 8 till 12 o'clock in the forenoon, and from one to half past two in the afternoon, except on Saturdays, when they are from 8 to 12 only.

Man has two hundred and forty-six bones; the head and the face sixty-three, the trunk thirty-nine, the arms sixty four, and the lower extremities sixty.—There are in man two hundred and one muscles, or pairs of muscles.

LIST OF BOOKS

For sale at the

AMERICAN FARMER ESTABLISHMENT,

BY

I. I. HITCHCOCK.

Loudon's Encyclopedia of Plants, containing 10,000 engravings on wood, 1 vol. 8vo. 1160 pages, . . .	\$24.00
Loudon's Encyclopedia of Agriculture, edition of 1831, 1100 wood cuts—1 vol. 8vo. 1252 pages, . . .	12.00
Loudon's Encyclopedia of Gardening, latest edition, 800 wood engravings, 1 vol. 8vo. 1254 pages, . . .	11.00
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I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$350.—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

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A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

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To be sold, at the Three Tuns tavern, on Saturday, the 16th day of November, at 12 o'clock, a variety of Cattle, of the Devon and Shorthorn breeds of pure blood, and superior in quality, consisting of

- 1 Devon bull, 4 years old.
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 - 6 rams, of the Bakewell and Southdown blood—the Bakewells are of the stock of Mr. Barney.
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- A Mule, the colt of the above Jack, 14 months old.
- The above stock has been raised on the estate of Brooklandwood, the residence of R. Caton. Apply to
- EVAN HUGHES, Manager, or
H. W. BOOL, Auctioneer.
- Baltimore, Oct. 18, 1833.—5t.

FRUIT TREES.

The subscriber has the sole agency in this city for disposing of FRUIT TREES, from the Nursery of Mr. Samuel Reeves, of New Jersey, which establishment has gained a high reputation for the quality of its trees and their fruit, a specimen of which can now be seen at my store. He will also receive orders for fruit trees, to be furnished by Mr. Saml. Gray, whose trees are already well known in this vicinity, orders for this season should be forwarded immediately.

J. S. EASTMAN.

N. B. In store SEED RYE, of prime quality, and also red chaff and red bearded WHEAT. J. S. E.
Oct. 25.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do ground leaf, 5.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 9.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ————Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 317 hlds. Maryland; 19 hlds. Ohio; 6 hlds Kentucky, and 1 hld. Pennsylvania—total 343 hlds.

Flour.—Best white wheat family, 6.75 a 7.25; 2d quality, 6.25 a 6.75; super Howard Street, 5.62½ a 5.75; (wagon price, 5.50, a ———) city mills, 5.75 a 5.87½; city mills, extra, 6.25 a ———. CORN MEAL, per 100 lbs. 1.50 a 1.56.—GRAIN, red wheat, 1.12 a 1.13; white do 1.15 a 1.25.—Corn, yellow, 5 a 66; white, 62 a 63; in the ear, 2.50 a ——— per bbl.; RYE, 68 a 70; chop 13c, per 100 lbs. 1.56 a ———OATS, 31 a 33.—BEANS, 1.25 a 1.50.—PEAS, 65 a 70.—CLOVERSEED 5.00 a 6.00. TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a ———; Tall Meadow Oat Grass 2.50 a ———; Herd's, 1.25 a ———. Lucerne 37½ a ——— lb.—BARLEY, 75 a ———. FLAXSEED, 1.37 a 1.50.—COTTON, Va. — a —; Lou. — a —; Alab. — a —; Tenn. — a —; Upland — a —.—WHISKEY, hlds. 1st p. 29 a —; in bbl's. 31 a 31½.—WOOL, 17 shed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 52 a 58; three quarters do. 47 a 52; half do. 42 a 47; quarter do. 37 a 42; common 37 a 42.—Unwashed, Prime or Saxony Fleeced, 31 a 37; American Full Blood, 28 a 31; three quarters do. 25 a 28; half do. 24 a 25; quarter do. 24 a 25; common, 24 a 25.—HEMP, Russia, ton, \$150 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 35 a 40.—Plaster Paris, per ton, 4.00 a ———; ground, 1.37½ a ——— bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.50 a 5.00.—Oak wood, 3.00 a 3.75; Hickory, 4.50 a 4.75; Pine, 2.50.

Wool.—There is not quite as much call for wool as there was a few weeks since, and prices are a shade lower.

CONTENTS OF THIS NUMBER.

Editorial, Lodging of Wheat; The Hop Culture; On writing for the American Farmer—On the farina of fruit blossoms—Weevil, inquiry—Orchard Grass—A Miscellaneous Article of Experiments and results on a small Southern Plantation—On the Culture of Hops, Botanical description, History, Soil, Planting, Dressing, Peling, Tying, Gathering, Drying, and Bagging—Stirring the earth a relief against Drought—On the culture of Orchard Grass—Discovery of Indian Corn—Scraps—The Worm Destructive of Peach Trees—Grapes worth having—On a Method of preventing the attacks of Caterpillars—Large Hog—How to cure good Bacon—To restore frosted Potatoes—Lafayette College—Cotton Seed Oil—The Rhode Island Agricultural, Mechanical and Classical School—Prices in the Baltimore Market—Advertisements.

The American Farmer,

Edited and published by I. IRVING HITCHCOCK, is issued every Friday from the "Establishment," No. 16 South Calvert street, Baltimore, Md.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged by THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

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THE FARMER.

BALTIMORE, FRIDAY, NOV. 8, 1833.

We invite the attention of our readers to an article in the present No. which we have extracted from the "Farmers' Register;" on "THE INFLUENCE OF THE ORIGIN OF SEEDS ON THE QUANTITY AND QUALITY OF CROPS." It was translated for that ably conducted periodical, from the *Journal d'Agriculture, &c. des Pays Bas*; we agree with the Editor of the Register, that it is an article which "well deserves the attention of all thinking farmers," and we have no doubt that a investigation of the theory here advanced, accompanied with judicious experiments, would be of material advantage in properly directing certain agricultural operations.—But we leave the article and Mr. Ruffin's remarks to speak for themselves; we will only say a word as to the author of the theory, Dr. Bronn. He is introduced to us with the title of "Professor of RURAL AND SYLVAN ECONOMY, in the University of Liege." We have no such professorship in our universities; no, no, to be a farmer on this side of the Atlantic, requires no knowledge in these days of universal illumination; except a knowledge of the way in which *every body does and every body has done from time immemorial*. In Europe, they act on a different principle however; the University of Liege, for instance, has its professorship of "Rural and Sylvan economy," while in this country we act as if a farmer could do as well without knowledge as with it. Is there one of our readers who will subscribe to such sentiments? Is there one who does not feel their absurdity? They have not indeed been expressed amongst us in so many words, but it is as well to express as entertain them or (what is worse) *act* as if we entertained them. And such is undoubtedly the fact in many, far too many, cases: farmers do not generally take sufficient pains to inform themselves concerning things which are intimately connected with their daily occupations. Our friend Weller, we hope is by no means the only one who has found by experience that "knowledge is power," but the number of those who stand as proofs that want of knowledge is weakness, degrading, fatal weakness, is much greater. We daily hear of the "march of improvement"—of this "enlightened age" and all that. If this is not mere cant, and if these things really exist, why should not the farmers have their share in them? Let them grasp their implements and march with the rest—No, *not with the rest*; let them *OUTMARCH* all the rest! Let them kindle their light till it blaze brighter than those around—and let them not *hide* it "under a bushel" but place it upon a "candlestick" for others as well as themselves.

We hint, (by way of parenthesis) that we have a *CANDLESTICK* ready.

We recently copied from a western paper, an account of a sale of 160 mules by Gen. Shelby of Kentucky for \$11,840 cash. The country west of Alleghenies is doubtless very favorable for the breeding of these animals, the real value of which for farm labor seems to be little understood in Maryland. We have had for several years near Baltimore, a Jack, which for size, vigor and all other requisites for a first rate breeder, is unrivalled by any other animal of the kind in America, so far as we have been informed. His height is but one quarter of an inch less than 15 hands, and he is every way well proportioned. Yet this splendid animal has been suffered to pass season after season, almost without notice and without use by our farmers. But this waste of valuable capabilities is now at an end—the animal has been seen by one who knows his value and how to profit by it. He has just been purchased from Lloyd N. Rogers, Esq. by the Hon. Henry Clay, and taken to Kentucky. We understand that he was sold for \$1000, which was certainly not high, considering his great superiority

over any other Jack ever seen in the country. We observe by the following paragraph, that Mr. Clay has also purchased some fine sheep—This we take to be the true "American System"—Who shall gainsay it?

RUNSELAIR SHEEP.—Mr. Grove, an extensive wool grower in the town of Hoosick, has a flock of fine Saxony sheep, of superior blood and quality. *Henry Clay* becoming familiar with their merit, made application to Mr. G. for a few to improve his stock. Fifteen have consequently been sent. They were shipped at this city for Baltimore last week.—*Troy Press.*

CORN STUCK MATTRESSES.—One of our subscribers inquires of us the best mode of making these mattresses or beds. If any of our readers can give the requisite directions, he will oblige us and our western friend.

The same gentleman wants directions for pickling red cabbage.

MARCH OF IMPROVEMENT.—If true economy, the real art of gaining, consist in converting to some valuable purpose, things that would otherwise be valueless or lost, then does the inventor mentioned below deserve a medal embellished with a wooden nutmeg on one side, and on the reverse a basswood ham. We have heard of sawdust puddings, of burning water for fuel, and of getting lots of oil out of cotton seed, but here is the *Né plus ultra*.

"The Portland Argus speaks of a box of fine looking *Spanish Cigars* (which smoke very well, and would pass with all but connoisseurs for first rate,) manufactured in Connecticut, with not a particle of tobacco of any kind in their composition, except that used in the coloring. The outsides were made of the leaves of corn-stalks, and the insides were composed of bean leaves and pea pods!"

We desire to inform the Amateur who made, through our paper, last week, certain queries relative to the mixture of farina in fruit trees, that we have neither forgotten nor neglected his demand for information. We have deferred answering his questions ourselves, in the hope that some of our correspondents would have given us something better than we could furnish. We have as yet received nothing, and he may expect to hear from us in our next.

We take occasion to inform our friends, that we do not think applications for information, or queries similar to those above alluded to, any way troublesome. We will always do our best, either to answer them ourselves or procure them to be answered by others more capable.

The following is from the Baltimore Gazette, and we copy it for the purpose of expressing our entire concurrence in the sentiments regarding one of the most useful periodicals of the day, and certainly one of the cheapest, considering its costly execution. We hesitate not to recommend this paper to the favorable notice of our subscribers. Its price is but \$3 a year.

AMERICAN RAIL ROAD JOURNAL.—The proprietor of this valuable publication states, that in order to meet the wishes of several gentlemen, residing remote from any agent of the work, who are desirous of receiving it in a more convenient form than weekly numbers, he has put up several complete sets of the Journal, in four parts, of thirteen numbers each, stitched in a cover of colored paper, which may be forwarded by mail to any part of the Union on the same terms as ordinary magazines.

By this arrangement the work may be obtained in any part of the country, by mail, in a convenient form for preservation, and at a trifling expense of postage. We are convinced that any intelligent and active friend of internal improvement, who should be informed of the nature and object of this Journal, and the manner in which it has been conducted, would do all in his power to obtain it a sufficient support to ensure its

continuance. Those who wish to subscribe have now a good opportunity of procuring the work from its commencement.

"RENDER TO CÆSAR THE THINGS THAT ARE CÆSAR'S."—The American Farmer, published at Baltimore, has republished the "Bird's-eye view," and has not credited it to this paper, where the credit belongs. It is not a matter of much consequence to us, but careless habits are dangerous, and we wish the Farmer well.

We have copied the above from the Winchester Virginian. We plead guilty and beg leave to explain. We were *sure* (almost) that we had given credit for the "Bird's-eye view," and, therefore, when we felt our neighbor's rap over our knuckles, we hastened to look into our paper and see who was mistaken this time, when lo and behold! we found that we had given credit to the Winchester Republican! We insist upon it, we are not *much* to blame; if two suns will move in one sphere, the observer will sometimes inevitably be so dazzled as to mistake one for the other.

Yet we thank our neighbor for his friendly correction, and still more for his kind wishes. We will endeavour to profit by them, and to prove our sincerity, we are now about to ask his aid in getting ourselves out of an awkward dilemma. We publish in this number a very seasonable article on Transplantation of Trees, which we have extracted from the Catalogue of the Messrs. Landreth, of Philadelphia. On turning over the very paper from which we took the animadversion quoted above, we found the same article, almost *verbatim*, communicated "FOR THE VIRGINIAN!" Now what *shall* we do? Shall we credit Landreth? If so, our friend, of the Virginian may urge his claim. If not, we may have another *Cæsar* down upon us from another quarter. Do advise us, brother, for we would move warily in this matter, and we will affix no credit to our extract until we hear from you. "Careless habits are dangerous"—Ahend!

SALT ON CORN.—A farmer in Alabama, in curing his crop of corn, finding it rather too damp to keep safely, tried salting it, as our farmers salt their hay. The experiment was quite successful.

As his corn was thrown in a pile on a large floor, he sprinkled it with salt, using from half a bushel to a bushel of salt to five or six hundred bushels of corn. The corn kept well, never became musty, and never had any weevil in it. Mr. B. still had of his corn when he communicated this information to us; and he stated that the bread which it then made was so sweet and good, that it was esteemed preferable to that made of new corn. He also stated that he was not under the necessity of purchasing any fodder for his working oxen last winter, they fed upon the husks of this corn so freely; and he added that they kept in excellent order. Mr. B. was so well pleased with this experiment, that he is putting up all his corn this year in the same manner, using about half a bushel of salt to five hundred bushels of corn, which he thinks is enough.

A radish, weighing ten pounds, was dug up out of his garden, by Mr. John Parlett, of this neighborhood, a few days since.—*Winchester Virginian.*

FIGS IN NEW ENGLAND.—The Nantucket Inquirer says, there is in one of the gardens of that island, a flourishing Fig tree, the fruit of which has come to maturity. The Hartford Times mentions another in that city, as heavily burdened with fruit, some of which has grown ripe and proves very good.

A farm one mile from Norristown, Pa. of 145 acres, was sold on the 17th ult. at public sale, for \$152 per acre, or \$22,040. The purchasers would not take \$5,000 advance for their bargain, says the Herald. It must be valuable land to warrant such a price.

AGRICULTURE.

(From the *Eastern Whig*.)

A PAPER read before the AGRICULTURAL BOARD, (Eastern Shore, Md.) by SAMUEL STEVENS, Esq.

In the early part of my life, having determined to pursue agriculture, I thought it requisite to lay down some plan which I might follow systematically, whereby I might be able to improve my land, and observe the advantages, if any, arising therefrom—I did so, and in order to comply with the following question which has been presented to the board of Trustees, viz: "What is the best mode of laying off a farm, taking into consideration fields, lots, homestead, garden, orchard and pasture?" I have taken the liberty of transcribing some of my first views which were prepared for the consideration of a former society; but finding it not to act with that spirit of emulation, calculated to draw forth the energy of the farmer, I declined presenting it. Having found it among some of my old papers, it is as follows, commencing with the year 1807, viz. six fields.

In the spring, 1807, seeded No. 1, in oats and clover; same spring, planted No. 2 in Indian corn; autumn 1807, seeded No. 2 in wheat, and fallowed No. 3, spring 1808, seeded No. 4 in oats and clover; same spring planted No. 5 in Indian corn; in June 1808, cut a crop of clover from No. 1, and in September rippled a crop of seed; in autumn 1808, seeded wheat on No. 5, (corn ground,) and fallowed No. 6, spring 1809, seeded oats and clover on No. 2; same spring planted Indian corn on No. 3; June 1809 cut hay from No. 4, and September took a crop of seed: Fall 1809 seeded wheat on No. 3, (corn ground,) and fallowed No. 1. Having now commenced the system, let me particularly recommend No. 1, not to be grazed on, or clover cut from it, during the spring or summer of 1809, but suffer it to grow without restraint, (but the weeds which will naturally spring up should be eradicated as far as practicable) and in the fall, say September 20—plough in the clover from six to eight inches deep, and roll it well as soon after ploughing as possible,—then seed your wheat and harrow it in, (provided your soil will admit of having it harrowed in,) if not plough it in so as not to disturb the sod, all should be performed as quick as possible after ploughing. Clover well turned in will improve your land, and act as a nutriment to the wheat. Spring 1810, seeded oats and clover on No. 5—same spring planted corn on No. 6. Then proceed as described above. From a regular rotation of crops agreeably to the annexed plan you will cultivate corn in each field but once in six years, and oats the same, and both crops are on wheat stubble, a crop of wheat from some of the fields every two years and others every four years,—putting two in wheat annually causes your wheat crops to deviate, but you have the whole of your farm annually under cultivation, and take from each apartment a profitable crop, except one from which you turn in the clover, which should be considered the most lucrative. There are two reasons for recommending the culture of oats, first, because I conceive one acre of oats can be cultivated for half the price an acre of corn can, and twice the number of bushels can be produced, and two gallons of oats are more than equal to one of corn, which leaves a balance of one hundred per cent. in favor of oats; secondly I entertain an idea that clover seed will take root and flourish more rapidly when deposited on ground fresh and well broken, than on wheat where the ground is hard, and subject to remain several weeks on the ground before it sinks. It may be enquired, what will be done for pasture? In answer, I will say, let your stock be confined in a large and dry farm yard, into which you should draw fifty loads of litter and ditch bank, marl, or good dirt per week; there feed your stock, for which you will have a sufficient quantity of straw and hay (provided you are fortunate) until the green clover is ready to cut,—the great quantity of manure will more than compensate for the extra expense of feeding, and your horses will

perform more hard labor on dry food, and escape the casualties which are incident to horses in the spring of the year, but you will have pasture after harvest on the wheat fields.

Table of Rotation.

No. 1. Spring 1807 oats and clover, June 1808, cut clover; Fall, rippled seed, Fall 1809 fallowed on clover, July 1810 pasture, spring 1811 corn; autumn 1811 wheat; July 1812 pasture, spring 1813 oats and clover; June 1814 cut clover.

No. 2. Spring 1807 corn, fall 1807 wheat, July 1808 pasture, spring 1809 oats and clover, June 1810, cut clover, same fall rippled seed, autumn 1811 wheat on clover, July 1812 pasture, spring 1813 corn, fall 1813 wheat, July 1814 pasture, spring 1815 oats and clover.

No. 3. Autumn 1807 wheat, July 1808 pasture, spring 1809 corn, fall 1809 wheat, July 1810 pasture, spring 1811 oats and clover, June 1812 cut clover, same fall rippled seed, autumn 1813 wheat on clover, July 1814 pasture, spring 1815 corn.

No. 4. Spring 1808 oats and clover, June 1809 cut clover, same fall rippled seed, autumn 1810 wheat on clover, July 1811 pasture, spring 1812 corn, autumn 1812 wheat, July 1813 pasture, spring 1814 oats and clover.

No. 5. Spring 1808 corn, same fall wheat, July 1809 pasture, spring 1810 oats and clover, June 1811, cut clover, same fall rippled seed, autumn 1812 wheat on clover, July 1813 pasture, spring 1814 corn, same fall wheat.

No. 6. Autumn 1808 wheat, July 1809 pasture, spring 1810 corn, autumn 1810 wheat, July 1811 pasture, spring 1812 oats and clover, June 1813 cut clover, same fall rippled seed, autumn 1814 wheat on clover.

This system I pursued (with the exception of soiling my stock) for several years, and was much pleased with it, and am well convinced it improved my land from ploughing in the clover; but experience taught me to believe it filled my ground with weeds and garlic, which in my estimation proceeded from the ground not being sufficiently rich to produce a heavy crop of clover, by which means those obnoxious weeds would have been subdued. At that time I had not discovered my marl banks, consequently was not able to procure a sufficient quantity of manure to cover the oat field, where I would recommend the whole force of manure to be applied, of course abandoned it. It then became requisite to resort to some other mode, and having discovered my marl and its utility, I resolved to put my farm in seven fields, annually cultivating two in Indian corn, putting one of said fields in wheat and breaking one for fallow, leaving the other stock field vacant on which I seeded wheat in fallow the fall following, but during the preceding winter and summer, applied all my manuring power on it with marl, &c. &c. taking care to have all my winter farm yard manure converted into compost in the spring by drawing it in the same field on my head lands; first ploughing a space of twelve or fifteen feet wide to deposit it on, then carefully covering it with the ditch bank and the scouring of the ditches to protect it from the sun, where it remains until fall, when the field is well prepared for wheat, the compost is spread out and ploughed in with the wheat on which I seed clover. By this rotation of crops you will always break one clover field for corn, and have the other corn on wheat stubble, after you get under full operation, and have the whole of your farm under a good crop except one field, viz. two in corn, two in wheat, two in clover, (one to cut and one to pasture,) and one vacant, viz. the stock field, as will be made evident in the following table.

No. 1. Spring 1815 corn, fall 1815 wheat, spring 1817 corn, fall 1818 fallow on clover, spring 1822 corn, fall 1822 wheat, spring 1824 corn, fall 1825 fallow and clover, spring 1829 corn, fall 1829 wheat.

No. 2. Spring 1815 corn, fall 1816 fallow and clover, spring 1820 corn, fall 1820 wheat, spring 1822

corn, fall 1823 fallow and clover, spring 1827 corn, fall 1827 wheat, spring 1829 corn.

No. 3. Fall 1815 fallow, spring 1817 corn, fall 1817 wheat, spring 1819 corn, fall 1820 fallow and clover, spring 1824 corn, fall 1824 wheat, spring 1826 corn, August 1827 fallow and clover.

No. 4. Spring 1816 corn, fall 1816 wheat, spring 1818 corn, autumn 1819 fallow and clover, spring 1823 corn, fall 1823 wheat, spring 1825 corn, fall 1826 fallow and clover.

No. 5. Spring 1816 corn, fall 1817 fallow and clover, spring 1821 corn, fall 1821 wheat, spring 1823 corn, fall 1824 fallow and clover, spring 1828 corn, fall 1828 wheat.

No. 6. Spring 1818 corn, fall 1818 wheat, spring 1820 corn, fall 1821 fallow and clover, spring 1825 corn, fall 1825 wheat, spring 1827 corn, fall 1828 fallow and clover.

No. 7. Spring 1819 corn, fall 1819 wheat, spring 1821 corn, fall 1822 fallow and clover, spring 1826 corn, fall 1826 wheat, spring 1828 corn, fall 1829 fallow and clover.

You will remark I have made an exception to one field being in cultivation, viz. the vacant stock field, but you may, without any interference with your fallow, seed oats on it, and put wheat on oat stubble. But still objections present themselves, viz. you are debarred the opportunity of drawing marl, marsh mud, or bank shell on it from the spring until harvest, and again it will be taking four successive crops before you apply your wheat fallow and clover; whereas, by omitting the oats you take but three viz. corn, wheat, corn, then fallow and clover, which I consider no disadvantage as you are enabled to destroy all weeds and garlic before the application of clover, and to compensate for the reduction of the land you restore it by the application of *marl, ma. sh. mud, lime, or bank shells*, being ploughed in during the summer, and re-manured by compost being spread and ploughed in with the fallow wheat followed by clover, which remains until the fifth spring, which will be readily perceived by the table presented; and here let me remark that *clover and manure* are the Sampsons of farming. Having persevered in the last mentioned system until I made myself well acquainted with the advantages and disadvantages thereof, I can safely say my crops have increased under it both in quantity and quality, although the last seven years have been unfavorable to wheat. The garlic has almost disappeared, which is of high importance—still there are some objections to the above; one is, I have my doubts whether or not it improves the land as much as the first system, as it must be a self-evident fact, clover turned in will improve land, and by the latter, one field of corn is put on clover—although I have observed, under the latter mode, my crops have increased, it will be remembered I had no marl, nor not half the quantity of compost in my first system, as now. The second objection is, I had no pasture from the planting of corn until the first of June, when the stock should be turned on clover and not earlier, therefore, thought it advisable to make a small exchange. My present plan of farming is much like the last, only dispensing with the fallow, but continuing the seven fields—two in corn, in lieu of the fallow, cut the corn from one of the fields, on which I apply all my manure, as before recommended, on wheat and clover, and put wheat on the other corn-field in the usual way—this gives me additional pasture; my experience has been of but short duration on the last mentioned system, therefore am not able to say much for or against it, but fear I am sometimes too much hurried for time to remove my corn and then apply the manure, particularly should the fall season be unfavorable for farm work. The above proceedings have altogether been confined to one farm; I have another which has for a long time been divided into four fields, putting one annually in corn, the fall seed it down in wheat and clover, in the spring applying all my manure to the corn ground; you have then one in corn,

one in wheat, two in clover (one to cut, the other to pasture on)—still you want pasture from April to June, when clover should be turned in on, as previously observed.

I have thus taken the liberty of laying before the board four plans or systems of farming, which have passed under my view, practically, for the last twenty-five years, and after a mature deliberation, have come to the conclusion, the seven field system, as reference to second table of rotation, may be the most profitable to pursue, particularly if convenience will enable the farmer to soil his stock as laid down in first six field system, or a standing pasture can be presented until June. One more remark and I am done. By the seven field system you will observe one corn crop annually will be on clover, therefore, as you do not turn in clover for fallow, which I consider of high importance, I would strongly recommend to have the clover-field (after taking therefrom a crop of seed) reserved ungrazed and turned in, in the fall, as a preparation for corn, by which means you procure all the advantage to be derived from the clover.

S. SILVENS.

THE INFLUENCE OF THE ORIGIN OF SEEDS ON THE QUANTITY AND QUALITY OF CROPS.

By Dr. Bronn, Professor of Rural and Sylvan Economy in the University of Liege.

[Translated for the Farmers' Register, from the Journal d'Agriculture, etc. des Pays Bas.]

Even to the present day, the cultivators of forest trees have not thought of taking advantage of a phenomenon which is presented to us in the cultivation of agricultural plants, and which, although it has never yet been sufficiently explained, is nevertheless well established. This phenomenon is the influence which seed exerts on the quantity and quality of the crop which is produced from it, according to the different nature of the soil and climate from which this seed has been procured. The good results of this influence have appeared after using seed from a cold climate and a tenacious and cold soil, in a warm climate and a dry and light soil; but they are also equally apparent under circumstances quite the reverse, provided the soil be not too dry and barren, and the seed has had the opportunity of being developed and coming to perfect maturity. It appears then that the two opposite kinds of soils and climates profit equally from a change of seed. Let us consider and examine at first a few observations which may serve to explain this phenomenon, and thence endeavor to deduce the physiological law, and apply it to the cultivation of trees.

The advantages resulting from a change of seed are generally recognized in the cultivation of the cereal plants. In some mountainous countries, in Scotland for example, they bring the seed from the low country and from the plains, where the climate is more mild, and consequently the seed more forward, a quality which it always preserves for several generations. We are convinced that the cultivator of this mountainous district, if he always used seed from his own crops, would reap later and later harvests, so that at last perhaps they would not come to perfect maturity; a circumstance easily explained by the short duration of the summers in the mountains. If, on the other hand, the cultivator of a flat country, the climate of which is mild and the soil dry and light, continually made use of his own seed, it would head every year sooner, the stalks would become shorter, and the heads and grains smaller and smaller, and in time there would result but a poor produce. In this last case the cultivator brings his seed with advantage from a country more cold, the soil of which is good and substantial. Probably these are the circumstances on which rests entirely the difference between the cereal plants of summer and those of winter, a difference too variable to be easily determined.

The flax without doubt, presents us with the most striking example of this phenomenon. We, with great advantage to our crops, bring our seed from Riga, i. e. from a colder climate—the sowing of which causes the grain to be slowly formed, and thus leaves more time for the development of the stalk, which is the principal object of its cultivation. To judge by analogy, we would be led to believe that the result would be the same, were we to obtain from a colder country and a colder soil the grain of the clover and other plants used for forage, in the cultivation of which our object is large stalks and a well developed foliage. Even at the present day we are without experience on this head.

Generally, all plants which are principally cultivated for their grain or fruit, need little or no manure; while manure is necessary for those plants from which we wish to obtain large stalks and leaves.*

Fruit trees which shoot vigorously, generally bear little or no fruit; and every circumstance, which on the other hand prevents the too great growth of wood, favors the formation of fruit. On this observation rests the cultivation of dwarf fruit trees, and espaliers; also that of the vine, &c. &c.

Field plants and plants of the kitchen garden (under equal circumstances in other respects), blossom sooner in dry, warm and clear summers, and their stalks as well as leaves are smaller, than in rainy and cloudy summers.

From these and many other analogous observations, we can deduce a physiological law of the greatest importance in the cultivation of plants, to wit: Every thing which favors the disproportionate growth of vegetables, opposes or retards their propagation or formation of fruit; and *vice versa*, the formation of fruit is hastened and forwarded at all times when exterior circumstances prevent the full development and disproportioned growth of the stalk.

Now to apply this law to the rearing of trees, I ought first to remark that many of the phenomena which I have mentioned, are equally apparent in the vegetation of forest trees, although they have not been so much noticed. In fact we see the greater part of our forest trees bear seeds sooner, more often, and in greater quantities, with a south exposure, and in a dry and light soil, than with a north exposure, and on a cold and stiff soil; while under the latter circumstances they acquire greater dimensions.

Many trees, the birch for example, vary with regard to the time of budding and formation of seed, some being forward, and others late. It is well ascertained that those which bud late, have the hardest, heaviest, and in every respect the best timber; and increase more in volume within a certain time, than the more forward kind. It is not yet proved that the same phenomena may take place relative to age, i. e. that there may be varieties which blossom and bear seeds, and the growth of which consequently diminishes at different ages. This appears very probable, since we frequently see larches, firs, birches, &c. trees which had their origin in a cold and elevated country, bear seeds in a low, dry and warm country, after having scarcely reached the age of ten or fifteen years, and ten or fifteen feet in height; and the growth of which afterwards becomes sensibly slower.

From this observation we may conclude that the trees of cold climates produced from seeds gathered in dry and level countries will degenerate after many years to dwarf trees, shrubs, bushes, &c. which will

*The author's meaning must be taken with reference to the usual rotations of his country, according to which, crops raised for their seeds, are preceded or followed by grass crops, or others in which the bulk of the whole plant is of far more importance than the quantity or the perfection of the seeds—and according to his theory, crops of the latter kind would receive so much more benefit from manure than the former, that economy requires the farmer's limited stock of manure should be given to the one kind, and not to the other.

[Ed. Farm. Reg.]

scarcely ever be of any value as forest trees. Every attentive cultivator of forest trees will have already noticed similar examples, which will justify this conclusion.

From all that precedes, I deduce for the rearing of timber trees this general law: It is necessary to procure, as far as possible, the seeds from a colder climate and a colder and stiffer soil than the climate and soil of the country on which you wish to rear these trees.

One of the best things for cultivation in the sandy lands of the provinces of Limburg, of Anvers, and of Northern Brabant, is undoubtedly the sylvan pine, [*pin sylvestre*.] According to the rule just above, the seed gathered in this dry and barren country should not be used, but ought rather be brought from a colder country, or from some place, the soil of which is colder and stiffer. Since sometime back, in France and elsewhere, the preference is generally given to the seeds of the pine from Riga, Norway, Scotland, Hagenau, &c. and the rule which it is my wish to establish, has thus been followed by us, but without our having been able to justify this preference by reasonable motives. We have been content to regard the pines of this country as a particular species or variety.

The fir *epicea* (a northern fir,) and larch, are suitable to be reared in the mountainous lands of Ardenne. If we used the seed which grows in the dry and sandy parts of Limburg, Anvers, and Northern Brabant, we would raise nothing but dwarf trees, which at the age of twenty or thirty years, perhaps, would be covered with mosses, and the growth of which would after that become more slow, and would soon afterwards decay. It is our interest then to bring these seeds from still colder climates and better soils, and from countries in which these two trees grow larger, viz: from the Alps, Switzerland, the Tyrol, the mountains of Hartz, the Black Forest, and Norway.

The rule which I wish to establish will perhaps become very useful in introducing into this country foreign forest trees, for it is very probable that the little success with which we have met in this important part of the cultivation of forest trees is occasioned principally by choosing unsuitable countries from which to bring the seed.

[The foregoing communication well deserves the attention of all thinking farmers. If Professor Bronn's opinion is correct, we may make it operate beneficially on the practice of every farm, either for the correction of common errors, or the introduction of positive improvements, or for both. Very many cases of the proper application of this theory will readily occur, of which I will mention a few only as examples.]

We frequently change our seed wheat, either from choice or necessity, and obtain new supplies from other, and perhaps very different soils—and we decide on the comparative productiveness of any two kinds, most generally, by their growth, as they stand in the field. Yet, according to the foregoing theory, the greater length and bulk of straw may be expected from seed that will yield a deficient crop of grain. By attending to the rule offered, we may make profitable selections of seeds from every single field, by taking from the warm and light soil, if we want the best product of grain, or the cold and backward, if the crop is of a kind to be most profitable in proportion to its whole bulk. Another necessary deduction is, that the farmers of Lower Virginia ought often to procure new seeds of clover and other grasses from the mountains, or the northern states, to renew the original bulk and value of those crops, and to prevent their becoming more productive in seed than in hay. And the reverse operation will be equally beneficial as to wheat and other grains, of which the mountain and northern farmers ought frequently to obtain a new stock of seed from the plains and from the south. But even if such considerable changes are not attempted, a less degree of benefit may be obtained by attending to these rules within the limits of almost every farm.

A striking proof of the truth of Professor Bronn's opinion of the influence of climate on seeds is present-

ed in the different times in maturing of the timothy grass of America and the cattail grass of England. These grasses are in appearance, and in every respect precisely the same, except that the English grass is about two weeks later in maturing than the American, when both have been sown together on the same soil. Mr. Strickland made the trial, and states the result in his observations on the agriculture of the United States, reported to the British Board of Agriculture.—This difference, which was so fixed, and appeared so remarkable to the observers, is completely explained by Professor Bronn's theory applied to the temperate and moist summers of England, and the more heated air and drier soils of the United States.—*Ed. Farm. Reg.*]

DWARF OR NORTHERN CORN.

MR. HITCHCOCK:

November 4, 1833.

I have often thought that much advantage might be gained by farmers, by cultivating the dwarf instead of the tall varieties of corn. I well know that some of our oldest and most experienced farmers object to it; but I have been unable to obtain from them any reason, satisfactory to my mind for rejecting the dwarf varieties. My own experiments have not been upon an extensive scale—never having cultivated large fields of it in this part of the union; but for six years past I have cultivated to the extent of a quarter to a half an acre every year; and the result has uniformly been very favorable. The variety I prefer is the eight rowed white or the eight rowed yellow, commonly cultivated in Connecticut. The yield has always been equal to the produce in the north. If this dwarf corn will succeed here, (and if it will succeed to the extent of a quarter of an acre, why may it not to the extent of an hundred acre?) its advantages over the common tall corn will be found to be these:—1. The crop can be gathered in time for seedling wheat or rye if desired. 2. The crop is not so exhausting to the soil. And here let me remark that it is bad economy to raise the tall kind merely for the sake of the greater produce of fodder, which is one of the reasons assigned for the preference given to it; because it will require more manure than the fodder will make to bring the soil into as good a condition as the dwarf corn would have left it. Corn fodder is the most expensive forage that a farmer can possibly supply to his stock—indeed, if he could raise corn without producing fodder at all he would be able to feed his stock much better by purchasing hay with the money he now expends in manuring his corn fields. Corn fodder cannot possibly produce as much manure as it takes from the soil. 3. The dwarf corn will produce more to the acre. This is asserted as a fact deduced from my experience; and the reasons I give for this greater produce are the following:—The hills may be planted nearer together, more stalks may be left in a hill, and more ears are produced to a stalk. So that, though a hill of tall corn shall produce from its two stalks, four large ears, the nine to twelve ears from the three or four stalks of a hill of dwarf corn shall yield more shelled corn than the four large ones. Therefore admitting that a hill of dwarf corn will yield only the same quantity as a hill of tall corn, the number of dwarf hills to the acre being from twenty-five to thirty-three per cent. more than that of the tall ones, will make the produce of the crop proportionably greater. 4. The dwarf corn is more valuable than the tall, the grain being heavier and richer in nutritive matter; hence, in the northern markets, northern corn always sells at five to ten cents a bushel higher than southern corn. Its superior value does not consist in any thing originating in fancy or taste, but in intrinsic worth. With the distiller, it yields more whiskey; with the pork raiser, more pork; and lastly, to the human system, it yields more nutriment than any of the tall varieties do, by at least *ten per cent.*

I would state all the objections urged against the dwarf corn if I could collect them from the vague

reasons assigned by those who entertain them. I assure the reader that I have never been able to get any better reason for rejecting this variety than the following:—"It yields very little fodder, and I like a large quantity of fodder, because it is the best for my cattle, and if the tall kind exhausts the soil more than the dwarf, it enables me to make more manure, by which means I can make the soil good again." "It is such a poor looking stunted crop, and its ears *all rub-bins*," &c. &c. Now, such reasons, if they were as thick as blackberries, ought not to prevent a fair experiment being made with the dwarf corn, and I would recommend the farmers of the middle and southern states to give it a trial. The seed can be obtained cheaply, and an acre might be planted by any farmer, without much risk either in money or labor.

While on the subject of corn, let me say a word as to pumpkins—the universal beautifier of a northern corn field. Farmers should reject the "*mammoth*" and common large thin fleshed pumpkins altogether, and raise what is universally known by the name of the *crooked necked winter squash*. It is the richest of all the pumpkin tribe, both for cattle and the table, and will keep, if protected from frost, "till this time next year. I believe, if laid up in a dry place, free from frost, it will keep several years. TRY IT.

(From the Farmers' Register.)

SAVING OF LABOR

In cutting down Corn Stalks, remarks on Contributors to the Farmers' Register.

Amelia, Aug. 22, 1833.

Dear Sir,—If your numerous patrons could be induced to communicate whatever they consider good in their system of management, much useful information would in this way be obtained. There are many excellent practical managers in Virginia, who cannot be prevailed on to write any thing for publication. Suppose something like this be suggested through the Farmers' Register—that facts be furnished you with the understanding that you will present them to your readers in your own way. In every instance the name of the person should be given.

In closing these crude, undigested remarks, I will give the method which I have pursued for several years in cutting down corn, preparatory to sowing wheat. I have no hesitation in saying that half the labor is saved. Instead of using a hoe with a long helve in cutting down the corn, to be picked up by another hand, I use a small hoe (which can be bought for fifty cents in Richmond) with a short helve, made of some light wood, such as pine, poplar or walnut. The operator taking the hoe in one hand, and taking hold of the stalk of corn with the other, cuts it down, carrying the stalks cut, until he has as many as he can carry. In this way the corn is cut and piled by the same hand, and the picking up, the *worst half* of the labor, is saved. In piling, three rows are laid in one, or six in two; leaving a space along which the cart or wagon may pass, to take the corn off, of the land to be sown in wheat. For several years I used knives in cutting down my corn, but found it very difficult to avoid leaving the stubble too long. With the short helved hoe the corn can be cut as close to the earth as with the long.

Thus, sir, on the plans suggested, I have given you the facts respecting my plan of cutting down corn. You will dispose of them as you please. For the inelegance of style, or other defects in communicating the facts, if published, I hold the editor of the Farmers' Register responsible. Respectfully yours,

JOHN H. STEGER.

P. S. I have used the term *my plan*. It is proper to say that with me the method did not originate: I learned it from a friend in Louisa. I introduced it in this county and in Powhatan. As far as I know, the old plan of cutting down, and picking up, still prevails. J. H. S.

[We are very willing to incur all the responsibility

of publishing the foregoing communication, and without changing a word—though we should certainly have used the privilege of altering the form, if it had been thought necessary. The communication of our friend and correspondent is just such as are most needed, and might be most abundantly supplied for the Farmers' Register—a statement of useful facts, in plain but correct words. We recommend both his suggestion and his example to others. Every real improvement in the mode of applying labor by one individual, however inconsiderable is worth communicating for the use of others: and if such was the course of every one of the patrons of the Farmers' Register, it would from this source alone, humble as it may be considered, derive and dispense more valuable information for farmers, than has yet been done by this or any other journal. It would become a literary *savings bank*, from which each customer would obtain a thousand-fold increase upon his deposit.—*Ed. Farm. Reg.*]

(From Poulson's Daily Advertiser.)

THE FIRST WHEAT IN NEW ZEALAND.

The difficulty of introducing the greatest improvements among people who need them most, is prettily illustrated by Williams' account (in the vegetable world) of the manner in which wheat was first cultivated in New Zealand by a native chiefs who had visited the English settlements in New Holland.—On leaving Port Jackson the second time, to return home, he took with him a quantity of it, and much surprised his acquaintances by informing them that this was the very substance of which the Europeans made biscuit, such as they had seen and eaten on board their ships. He gave a portion of it to several persons, all of whom put it into the ground, and it grew well; but before it was well ripe, many of them were impatient for the produce; and, as they expected to find the grain at the roots of the stems, similar to their potatoes they examined them, and, finding no wheat under the ground, all, except one, pulled it up and burned it.

The chiefs ridiculed Duaterra about the wheat; and all he urged would not convince them that wheat would make bread. His own crops and that of his uncle, who had allowed the grain to remain, came in time, to perfection, and were reaped and threshed; and, though the natives were much astonished to find that the grain was produced at the top and not at the bottom of the stem, yet still they could not be persuaded that bread could be made of it.

A friend afterwards sent Duaterra a steel mill to grind his wheat, which he received with no little joy. He soon set to work before his countrymen, ground some wheat, and they danced and shouted with delight when they saw the meal. He afterwards made a cake, and baked it in a frying-pan, and gave it to the people to eat, which fully satisfied them of the assertions. From this time there was, of course, no difficulty in making the culture a fashionable one.

COTTON.—Mr. Hulhum, near La Grange, in Fayette county, Tennessee, has raised this present year, on 155 acres of land, with fourteen hands, about sixty-two thousand five hundred pounds of clean cotton, and has sold the same at the gin for 16 cents per pound.

By a statement in the Floridian, we perceive that a great increase in the production of cotton in Florida, is taking place every year. From two ports in Middle Florida, St. Marks and Magnolia, in 1825, sixty-four bales were shipped. In the year, from the 1st of July 1832, to the 1st of July 1833, nine thousand six hundred and seventy-five bales were shipped from the same ports. This fact speaks for itself.

It is said that a strong desire exists among the planters in the West Indies to have a supply of agricultural laborers from this country to assist in the cultivation of their estates, and to bring into use a vast quantity of land at present unproductive.

HORTICULTURE.

(From Kenrick's New American Orchardist.)

ON NOXIOUS INSECTS AND THE MODES OF DESTROYING THEM.

APHIS, PUCCERON, VINE FRETTER.—Of this genus of insects there are many varieties; they prey on the leaves of different plants. Various modes for their extermination have been successfully tried. Infusions of tobacco-water, or of aloes, or elder leaves, or of cayenne pepper, thrown on the leaves with a syringe is said to be effectual. Willis' syringe is the best known for this purpose. Sulphur dusted on them with a swandown puff has been highly recommended. Lime water answers in many cases, and even soap suds.—Lastly, vinegar is a powerful application.

BORE.—The borer is a destructive worm which perforates the wood of the apple and quince at the surface of the earth or a little below, where the bark is tender. If the insects have once entered the tree, they must be dug out, or destroyed by introducing into the aperture a sharp flexible wire, and the aperture must afterwards be filled with clay or mortar. The eggs which produce this insect are deposited from the last of April to the beginning of June. To prevent their attacks and secure the trees effectually, nothing more is necessary than to surround it, a little before the season when the eggs are deposited, either with a small conical mound of unleached ashes, or clay, or mortar, or with a wrapper of brown paper, as recommended for the peach. For small trees, a solution of two pounds of good potash in seven quarts of water, applied with a brush, from the height of a foot quite down to the surface, is a very cheap, easy, and effectual mode of preserving trees from their attacks, provided the application is made at the suitable season.

CURCULIO.—The curculio, in those parts of the country where it has gained a habitation, is the most destructive of all enemies to fruit. The curculio is a winged insect or beetle which rises from its earthy bed, and chrysalis state, about the time the young fruit is forming in spring. They crawl up the trees, and when sufficiently numerous, they puncture, and deposit an egg in every fruit, particularly those possessed of smooth skins, as the apricot, nectarine and plum. They are stated to continue their work of destruction till autumn; the egg thus deposited soon hatches, and produces a worm, which preys on the fruit, causing it in most cases to fall prematurely. With those fruits which I have just named the destruction is usually almost total, in those parts of the country where this insect abounds. Yet it is stated as a fact by Dr. Tilton, that two trees frequently standing so near to each other as to touch, the fruit of one has been destroyed and the other has escaped, so little and so reluctantly do these insects incline to use their wings. After the fruit thus injured has prematurely fallen and gone to decay, the worms descend into the earth, there they remain during winter in their chrysalis state, till the warmth of spring again calls them forth to renew their depredations. The cherry, though equally liable to their attacks, yet from the multitude of fruits which they produce and their early maturity, usually escape with but a partial destruction; and the peach escapes in a great measure, from the rough and woolly nature of its skin.—The apple, although equally obnoxious to its attacks, frequently survives, although disfigured in its form and lessened in its size. The pear, although sometimes attacked, yet seems to escape the best of all.

Various modes have been recommended and practised to destroy this insect or avert its attacks. Some have recommended kindling small and numerous fires in the orchard by night, on the supposition that like the miller, they would be attracted by the light, and precipitate themselves into the flames. And some

have asserted that the odor of tar annoys and disconcerts them; and have therefore recommended to suspend slips of shingles to various parts of the tree, which are to be frequently dipped in tar.—If the odor of common tar has indeed been found so efficacious as is asserted, I would recommend that the *coal tar*, which may be purchased at the gas works in all our principal cities, be tried with the same intent. This last substance has, it is asserted, an odor so lasting, and so powerful and annoying, that experiments are making by gentlemen in Nantucket, by covering with this substance the exposed plank of their ships which sail to the Pacific, to preserve them from the destruction caused by the sea worm.

It has been noticed, that trees situated in lanes and extensive yards, where numerous cattle are confined, generally escape the attacks of the curculio. This is supposed to be in part owing to the ground being trodden so hard as to render it difficult for the worm to enter the earth, and to the annoyance and fright to which this timid insect is subjected, by the cattle rubbing against the trees. The insects, according to Dr. Tilton, in such cases of fright, roll themselves into a little ball, and fall to the ground, where they become liable either to be trodden to death, or devoured by the farm-yard poultry as a delicious morsel. Poultry of all species have been recommended as very useful, from the multitudes of insects they devour, they being particularly fond of the beetle tribe.

A case is mentioned by Dr. Tilton [see Dom. Ency.] of Col. T. Forest of Germantown, who, "having a fine plum tree near his pump, tied a rope from the tree to his pump handle, so that the tree was gently agitated every time there was occasion to pump water. The consequence was, that the fruit on this tree was preserved in the greatest perfection."

Hogs are stated to be extremely useful in orchards, by devouring at once the fallen fruit and the insect which it contains. And provided the hogs are sufficiently numerous to devour every fallen fruit, they will shortly exterminate the insects from the orchard in which they are permitted to roam.

Paving the ground. This is said to be a most effectual mode of preserving fruit from the attacks of the curculio;—by preventing its descent into the earth it finds no winter habitation. The ground should first be well manured, and the whole surface well paved with the common stones which so often encumber the fields. The trees in this case may be set very close. The excess of rain being carried off by the pavement, and their luxuriance being thus restrained, such trees must not only produce great crops, but from the effect of the sun on the naked pavement, the fruit must be of the finest quality.

SLUG WORM.—These insects sometimes appear on the upper surface of the leaves of fruit trees, especially those of the pear, in the month of July; and sometimes they appear again early in autumn. They are covered with a glutinous substance, and their destruction is easily effected, by simply sifting air slaked lime over them, dry ashes however answers equally as well. For large trees, an oblong tin vessel, perforated at the bottom with numerous small holes, and partly filled with lime or ashes, may be suspended by a string from a long, slender, and elastic pole. This being shaken over a tree, distributes the lime amongst the leaves, and the slugs are speedily destroyed. A man may go over a large tree in a few minutes. (Pest. Amer. Gardener.)

WASPS.—Mr. Bartram has recommended, for the destruction of wasps which devour and puncture the grapes in vineyards, that shallow vessels, containing sugar and water, or mola-ses and water, should be placed on the windward side of the vineyard. The sweet perfume attracts them from a great distance from the leeward; they are thus destroyed, by partaking inordinately of the liquid.

Mr. Knight has informed us, that the wasps disappeared from his vine house after he had surrounded it in part with a hedge of the yew tree.

THE WHITE MEALY INSECT.—This insect is described by English writers as an insect of a most pernicious character, covering the trees and branches. It is little known. I must refer to them for the remedies.

"Take half a peck of quick lime, half a pound of flour of sulphur, and a quarter of a pound of lamp black. Mix the whole together with as much boiling water as will form the ingredients into a thick paint. This composition is recommended to be applied to the stems and limbs of apple trees which are infested with the *White Mealy Insect*, having previously removed the moss and loose bark by scraping them off with a strong knife, or some other instrument adapted to the purpose.

"In using the composition, it will be most efficacious if applied in a warm state, or something more than blood heat."—*Lindley*.

On young trees, Mr. Lindley further informs us, "vinegar will effectually destroy this insect; but would be too expensive to be applied when the trees are large."

(From the New Hampshire Spectator.)

CULTURE OF SILK.

The culture of silk has of late been suggested to the American people as affording a prospect of reward to the cultivator of the New England or the Eastern states. If you think the following experiment worth an insertion in your paper, you may oblige some who wish for more information on this subject. I have made an experiment personally, and can attest the truth of every item that I communicate, for I have kept an exact diary of the whole experiment, and the result. I may be permitted to say in the outset, that I never have had an opportunity of attending any silk worm establishment, and all the previous knowledge I have ever had, before commencing the experiment, was in 1831. I saw one silk worm in the action of winding, and one other on the shelf, nearly ready to ascend the bushes to winter; and in 1832, one or two hatched about ten days old, reared by those who had no previous opportunity of seeing the development of the silk worm, and were as unlearned as myself. This fact is only hinted at to prove that any person may, by diligent care, raise silk, if they never were acquainted with the art: yet, to make it profitable in the end, as in every other species of cultivation, a complete knowledge of the subject is undoubtedly necessary.

On the 20th June last past, my eggs were hatched. I counted out 1500, and a few more to supply the place of those that should die in the several stages, say from 50 to 100. These were uncoupled. My calculation was to raise about 1500. By reason of the cold and rainy summer, the worms were retarded in their growth, as will always happen—warm and dry weather being the climate suited to the full perfection of the worm, and facilitates its growth and maturity; yet, the food in either case, will be about the same—the only difference will be the length of time required for the insect to eat the same quantity of leaves. The first cocoon was wound on the 38th day of the age of the silk worm. After the fourth moulting, or in other words, shedding of their skin—for they skin four times during their life before they commence winding their balls or cocoons—they are usually about ten days in winding up their cocoons. Previous to their moulting the fourth time, I counted about 1450; so that 50 had died out of the 1500 beside the worms I held in reserve above stated. Of these 1450 worms, beside those that died during this last age of the worm, and during their winding, I counted 912 that remained on the shelves on the 40th day—585 on the 42d day—333 on the 43d day—186 on the 44th day—90 on the 45th day—43 on the 46th day—26 on the 47th day—13 on the 48th day. In ten days from the beginning of winding, all had wound their cocoons, except thirteen worms. In four days more, these were all wound. The whole time the sil-

worms were progressing through their several ages, each age designated by their moulting, including the winding, was 53 days—the usual time is from 42 to 45 days—retarded, no doubt, from the cold and dampness of the season. There died in the whole 257, during the several ages, till the completion of the cocoons. I had 1343 cocoons of all descriptions, and but few, say fifteen, that would not reel off. The reserved uncounted worms are not included in this estimate.

The weight of cocoons before reeling, and as soon as they were picked from the bushes, weighed 4 lbs. 3 oz. Twenty cocoons weighed precisely 1 oz.

Raw reeled silk, 63 ounces.

Raw silk, 11 ounce.

Making the whole product of silk nearly one half pound.

The weight of leaves consumed and wasted, was 75 lbs.

After I had found the quantity of leaves the 1500 worms consumed, I made a comparison with a statistical table communicated in a letter to the 20th Congress of the United States, by Hon. James Mease, on the method of rearing silk in Bavaria, and found by this table, 20,000 silk worms consumed 1000 lbs. mulberry leaves—exactly corresponding to 75 lbs. for every 1500 worms—and that from 7 to 10 lbs. of cocoons make a pound of raw or reeled silk—from this estimate the product of my experiment nearly coincides, for 4 lbs. and 5 oz. produced 73 ounces of silk. Nor does this estimate of the consumption of leaves and the product of silk, materially differ from the estimate and exact result of Count Dondolo—transmitted to Congress by the Hon. Richard Rush, then Secretary of State.

It will readily be perceived that the rearing of silk worms in our state is practicable, and with due management equals the product raised in Bavaria, and the careful management in the extensive laboratory of Count Dondolo, where eight ounces of eggs, or 160,000 worms are reared. In this laboratory the leaves are chopped, the thermometer regulates the temperature, and the pyrometer the dampness of the atmosphere, and every measure of precaution used to secure the worms from disease—by ventilation, by stoves, and by cleanliness. On reading these treatises and observing all the nice directions contained therein, any person would almost shrink from the task, and become discouraged before they attempted to enter a field where so many obstacles seemed to threaten him. I have chopped no leaves—made no fire but once or twice, and then when the weather was extremely cold and damp for the season. I gave them what they would eat, and they appeared to know what to do with the leaves as well as any other insect, and not more at a loss about it.

I am fully of opinion that the culture of silk is as easily learned as any other kind of business or art—and that many families in every town would find as profitable reward for their labor as our rich farmers do, by correspondent care and exertion.

ELIAS FROST.

Plainfield, August 27, 1833.

OBSERVATIONS ON TRANSPLANTING TREES.

As success in transplanting trees depend much on the treatment they receive in that operation, we have thought it advisable to present a few remarks for the observance of those who have had but little experience on the subject. On removing trees from the nursery, care should be taken to prevent the roots from drying previously to planting them, otherwise they may receive considerable injury, and in executing our orders for trees, particular care is taken to preserve them from drying winds before packing. Immediately on their receipt, the bundles should be unpacked, the roots well watered and "laid in," until the ground in which they are to be planted be ready to receive

them. By laying in, is to be understood the making of a trench sufficiently large to admit the roots, into which they are placed: the earth having been previously made fine, is then filled in around them, and a gentle watering given, in which situation they may remain with safety, until planted. The holes in which it is intended to plant them, should, for an ordinary sized nursery tree, be from 2½ to 3 feet in diameter, and about the same in depth; the earth from the bottom should be thrown aside; and its place filled up with good compost or black mold, (no fresh stable manure should be used in the compost.) The tree should be planted one or two inches deeper than it stood in the nursery; the roots and fibres being spread out horizontally, and during the process of filling in the earth; the tree should be shaken several times, so as to admit the soil between the roots, and also fill up any cavities that might otherwise remain. The earth should then be trodden down and gently watered; in a short time it will have settled, and any hollows that may have formed should be filled up—finishing by forming a ha-in around the trunk to receive the rain or watering which it may be necessary to give it, if the ensuing season should prove dry; to prevent the winds from loosening the earth around the roots, they should be secured to a stake by bands of straw.

The proper season for transplanting trees in this latitude is from the middle of October until the first or middle of May, during which time they may be safely transported; when they are destined for the south, the autumn and winter months, perhaps, are preferable, but when for this latitude, or northerly, spring and autumn are equally good—evergreens are thought to succeed better when transplanted in the spring; much, however, depends upon the nature of the soil; if heavy, we would, in general, prefer the spring. Bulbous, and other flowering roots, such as hyacinths, tulips, ranunculus, anemones, crocus, &c. &c. are taken out of the earth in June, from which time, to November or December, they can be transported without risk.

Green house plants can be transported by water, and for short distances by land, at almost any season, though the autumn, winter, and spring months, are preferable, as they may then be closely packed, and require no attention on the passage.

PARMENTIER'S GARDEN.

New York, Oct. 23.

We learn that Mrs. Parmentier has recently disposed of, at private sale, the ground now occupied by her as a garden, for the sum of fifty-three thousand dollars. The enclosed premises cover about ten acres and are distant a mile and three quarters from Brooklyn Ferry. When her late husband purchased this property about eleven years since, (for which he paid six thousand dollars) it was almost a barren rock, and all his friends at that time thought he had entered upon a Quixotic speculation. But, a few years of great personal exertion and the expenditure of a few thousand dollars, shewed him in the possession of one of the most beautiful grape and flower gardens in this part of the country. Since his death, his respectable widow and daughters have carried on the business to the entire satisfaction of their patrons and the public at large. The rage for speculation in Brooklyn, has enabled Mrs. Parmentier to retire from active life, with a competency for herself and interesting daughters—the just reward of virtuous and wellspent lives.

[Gazette.

COTTON CROP OF MISSISSIPPI.—A writer there estimates the export at 200,000 bales:

"These at \$40 per bale, would amount to \$8,000,000. The entire agricultural interests of this State, yearly, are about ten millions."

RURAL ECONOMY.

COWS.

The marks of a good cow are these: the forehead broad, the eyes black, the horns large and clean, the neck long and straight; the belly large and deep, the thighs thick, the legs round with short joints, and feet broad and thick. Red cows are said to give the best milk; though the black ones are said to bring the best calves, which is, however, doubtful. But the cow that gives milk the longest time between the periods of her calving, is generally the best for profit or family use; provided the quantity and quality of her milk be equal to that of others.—Those that calve pretty early will yield most milk in the season.

The time of milking ought to be regular, and as nearly equi-distant as possible. Where the feeding is full, it is found that milking three times a day, during the summer season particularly, will increase the quantity nearly one-third. In that case the first milking ought to be at sun rise, the second about one, and the latter about seven or eight o'clock in the evening. Omitting to milk cows regularly, at least twice a day, tends very much to dry them. Sometimes one or more teats of a cow may be diseased, but this does not affect the milk of the rest.

Cows are certainly very profitable.—Allowing one to give only six quarts a day, forty weeks in each year, and it is not a large allowance, her milk, at two cents per quart, will amount to upwards of thirty-three dollars; which is probably sufficient to purchase her, and pay for a year's keeping.

BEE HOUSE.

We have seen a bee house, the method of constructing which, was introduced into our country by Mr. Eber Wilcox, of Salem, and which is said to be a very valuable improvement. Several individuals have tried it with entire success. It consists of a house of brick or wood, (if wood standing on stakes,) say of the size of a common smoke-house, with a door to admit of the entrance of a man. The inside is merely furnished with shells like an ordinary pantry. The bees pass in and out through several apertures resembling spouts, arranged in rows on each side. These spouts project six inches, and the hole is perhaps two or three inches wide, by from one eighth to one half an inch in height. The benefits of this method are said to be these: the bees never swarm, but continue filling up the house; the honey may be easily taken out, when the bees retire to the bottom of the combs in cold weather; and it is said to be an infallible preventive to the worms, and the light fingers of the night gentry.—*Cortland Advocate.*

FARM HORSES FED ON STEEPED BARLEY.

The barley is steeped forty-eight hours in a close wrought wicker basket, fixed into a cask of water, for the convenience of draining it when taken out. It is then laid on the floor to sprout, where it requires some little care. The kernels should be examined by opening them; and if the nib of the sprout is half way up, it is then ready to use; if suffered to grow through the kernel, then the saccharine matter will be exhausted, and the nutritious part lost. No more should be steeped at one time than is used at this state of vegetation.—*Gardener's Magazine.*

SLOBBERING HORSES.

A practical farmer in the Bucks county Intelligencer says, that he has occasionally observed timothy, herd and clover, produce this disease; and that during twenty years observation on orchard grass, he has known only one instance of its producing this effect, and this from hay cut in November. He considers this last grass, as a pasture, to be without a rival.

MISCELLANEOUS.

BUNCOMBE COUNTY, N. C.

MR. HITCHCOCK: Flat Rock, Buncombe Co. N. C.

SIR:—Spending the summer in this mountainous region, I have, at the house of one of your subscribers, had the opportunity of seeing your useful paper, and have determined in this communication to contribute my mite towards your undertaking. I am not a practical agriculturist, but while travelling pretty extensively in the United States, have been interested in comparing the various soils and modes of cultivation I have met with. Please accept the following brief notices of Buncombe, N. C. the county immediately west of the Blue Ridge, reaching from the southern boundary or South Carolina line to the edge of Tennessee. It comprises the valley of the French Broad, and the waters that flow into it, with a portion of the valley of Green river, South or S. E. of the Blue Ridge. The scenery is fine, the air delightful, the waters the purest and sweetest in the world. In point of health no country can surpass it. It possesses extensive beds of iron, a little gold is found in some of its alluvial deposits and river beds, lime abounds, and there are several mineral springs, the most remarkable of which are the Warm springs on the French Broad, 36 miles below Asheville. Many interesting particulars might be collected in this survey of the county, but I pass on to what you will consider as more appropriate to the columns of the American Farmer.

The climate derives its character from the great elevation of the country above the sea. In crossing the mountains to enter this county, every one is struck with the trifling descent on the Buncombe side compared with the height he has climbed on the other. The difference between the temperature on the two sides is not less than 8 or 10 degrees in summer, and it is probably greater in winter. I saw snow on the mountains 15 or 16 miles west of us yesterday morning (Oct. 22). The summer is short and the heat not more than sufficient to ripen corn in favorable seasons. Small grain particularly rye succeeds well—and so I understand does buckwheat. The N. W. end of the county is the coldest in winter and warmest in summer. The climate at this spot (Flat Rock) is delightfully temperate for the most part, both winter and summer. Cotton is not planted at all. The sweet potatoe grows, but never to a large size—the Irish potatoe however succeeds better than in any other part of the southern states. Peaches scarcely arrive at perfection, unless in favored spots. Apples and grapes do exceedingly well. Watermelons and other melons not very well. Clover and the grasses are well suited to the climate. Persimmons are scarce. The white pine grows here as in New England, and the tree there called hemlock which are not found on the S. E. side of the mountains in the southern states. The chinquapin is abundant enough to sicken all the children in the county. These facts are connected with the climate or temperature. I ought to add that tornadoes and hurricanes and even violent winds are not so common here as in the lower countries.

The soil is various, but differs remarkably from that of the counties below. There is not here such a depth of stiff red clay. The bottoms are often very fertile, consisting of a deep black mold, which is highly productive, if it be not found to lie on a white gravel—this latter rendering it cold. Draining is sometimes too expensive and laborious in such cases—and in fact, the nutriment of the vegetation seems to percolate or leak away through such a stratum of gravel.

Gravel on the whole predominates too much in a great portion of the uplands. A decaying granite seems to have formed a large part of the surface.—Much injury is suffered by the washing away of neglected soil. Some of the more level spots on the top of the Blue Ridge are among the best uplands in

Buncombe, as it is said—I have seen buckwheat, corn, and Irish potatoes under successful cultivation on such spots.

The modes of cultivation suited to the northern states, as you may at once perceive from the above remarks, are the proper modes for this region, but unhappily the settlers brought hither too many of the customs and prejudices of southern cultivators. You see indeed, a few who plant orchards, cultivate the grasses, drain their low grounds for meadows, and gather winter provender for their stock;—but even they enter into the farm system too partially and slothfully.* Most aim principally at one thing—Indian corn, to which the season is often unpropitious, and that failing, they are greatly distressed. They cultivate it too in the usual southern manner, ploughing light and wearing out the soil as fast as they can in order to throw it away, and with the remnants saved from the wreck to purchase new land in the west. The range is still so good (from the sparseness of the population) as to lead to very general neglect of pasturage and winter provision for stock, while it is altogether insufficient in the winter. Hence you can forbode the consequences to cattle whose owners will not supply them in the severer seasons of the year. Few good cattle are to be seen, well as the country is adapted to the raising of stock. The flavor of the beef and mutton (properly fitted for use) is remarkably good. No where do sheep succeed better with due attention.—Horses raised on the mountains are found to be very serviceable, their limbs are peculiarly sinewy and their hoofs tough and hard. Butter is made to some extent for distant markets. Ginseng is procured from the mountains, by a few, for exportation. Honey is remarkably fine and abundant. Blue grass succeeds admirably.

The great difficulty here is the want of information. At their very doors the people have an excellent demand for all they can raise, and are paid in cash the highest price; for, the road which passes 70 miles through Buncombe along the valley of the French Broad and over the Blue Ridge at its various gaps—the grand defile through which the communication between the western and south-eastern states passes—is an immense thoroughfare and consumes all the surplus produce, except the apples and a little of the beef and butter. At present, corn and other grain is not raised in Buncombe in sufficient quantities to furnish feed for all the stock (horses, hogs, mules, &c.) and all the travellers passing through it. Knowledge would, if extensively diffused, soon enrich this country—nor can there be a better opening than what is here furnished to a practical intelligent agriculturist, who wishes to settle in a healthy county. There ought to be at least one agricultural society, to give an impulse to improvement. I am sensible how desultory and imperfect are these notices, but I trust they will not be altogether unacceptable.

Yours very respectfully,

J. D. Patten, M. D.

DISEASE AND ITS CAUSES.

The editor of the New York Mercantile Advertiser and Advocate, gives the following interesting sketch of a lecture delivered in that city on Monday evening:

Mr. Whitlaw delivered a lecture last evening, at the Chatham street chapel, to a very respectable, though not very numerous audience.

We listened to him with great attention; and though he took a wide range in his subjects, in time, and in the various countries of the world, he confined himself generally to the great object he had in view; namely, to show that most of the diseases to which the human system is subjected, arise

from impure diet. He read from the Bible, in the book of Numbers, several of the prohibitions with regard to food; showing their wisdom, and proving from them that Moses was of the same opinion afterwards put forth by the celebrated Linnæus, and now urged, as above mentioned, by Mr. Whitlaw. He declared that fat was very unwholesome, because it was generally produced by a diseased state of the animal; and contended that most of our kine, sheep, &c. were fed from the land badly manured and rank with weeds. Rank manure, when proceeding from street and stable exuvie, he particularly reprobated. He stated many facts, to prove that many of the constitutional diseases of England were owing to the coarse manure used. The influenza particularly was caused, Mr. W. thought, by the yellow butter cup. In wet seasons it did not so much prevail; but in dry seasons it created an unwholesome atmosphere, which spread disease throughout the country. He instanced Holland as one of the healthiest countries of Europe, which, he said, was owing to a law obliging the farmers to clear their fields from weeds. Butter to the amount in value of £500,000 sterling was imported into England from Holland annually. He had been present at an examination of some Irish and Holland butter: the latter was perfectly sweet, while the former was so rancid as to almost injure the person who examined it, by its effluvia, although they were of the same age.

He spoke of the yellow fat of our meat at some seasons, which he argued was occasioned by the cattle eating the butter cup. The great importance of a supply of wholesome water to this city was strongly urged, as well as that of pure milk. Mr. W. stated that he had not lost a patient out of one hundred which he had treated for consumption, from March 1832 to March last; and it was principally owing to the careful manner in which he had prepared the soil, and raised nothing for their use but from the cleanest white clover, blue grass and timothy.

In 1821, the whole crop of rye, north and west of Pennsylvania, was full of *ergot*, or what the farmers call *spurred rye*, which had been eaten and distilled, and had, in his opinion, produced the great extent of cholera in the summer of last year.

Capt. RILEY, so well known to the public by the account of his sufferings while a captive among the Arabs of the African Desert, as well as for his benevolent character, has recently returned from a voyage to Mogadore, and presented to the American Colonization Society *twelve bushels of Barbary wheat*, in hopes that it may be better adapted to the soil of Liberia than that grain of this country. This wheat is thought the best in the world, and flourishes in a climate where frosts are never known. Should it suit the Liberia climate, it must prove a most valuable grain for the Colony.

Chance has led to the discovery of a method of preserving potatoes, which is both simple and attended with little or no expense. A housekeeper had placed in his cellar a quantity of charcoal. Having removed in autumn, without sweeping the dust which covered the ground, he caused a large quantity of potatoes to be laid on it. Towards the spring, those roots were preserved and had thrown out no shoots, and were as fresh and well flavored as ever.

BUTTER IN NEW-YORK—It is computed by the New-York Farmer, that 10 000,000 pounds of butter are consumed in New-York yearly. This at 18 cents per pound, gives \$1,800,000 to the farmers in return for their butter.

RYE.—The Haverhill Democratic Republican states, that Mr. Jacob Davis, of Bradford, Vt. found the production of one kernel of rye in his field, to be 400 feet of straw, 75 heads and 3270 plump kernels.

* Mr. Patten's farm on Swanans, is a noble exception—the cultivation there, is better conducted than in any other farm I know of in Upper Carolina, North or South.

Prices Current in New York, November 2.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, .15 a 18; Upland, .13 a .16; Alabama, .13½ a .17. Cotton Bagging, Hemp, yd. .20 a .22; Flax, .18 a .19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, — a —; rough, 13.50 a —. Flour, N. York, bbl. 5.62 a 5.68; Canal, 5.69 a 5.68; Balt. Howard st. 6.25 a 6.50; Rh'd city mills, 6.75 a 7.00; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. 1.16 a —; Rye, North, .80 a —; Corn, Yel. North, .78 a .79. Barley, .72 a —; Oats, South and North, .35 a 40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Provisions, Beef, mess, 8.50 a 9.00; prime, — a —; cargo, 5.50 a 5.75; Pork, mess, bbl. 16.75 a 17.00 prime, 11.75 a 12.00; Lard, 10½ a 11.

DEVON BULL.

The thorough bred bull Othello, 4 years old last spring, if immediately applied for, will be sold for \$100. Apply to I. I. HITCHCOCK, American Farmer Establishment.

MILK WHITE TURKIES.

A few pair of these beautiful fowls, are for sale at this Establishment, at \$5 a pair.

They are equal in every respect to any other known breed, and for beauty far superior.

I. I. HITCHCOCK,
American Farmer Establishment.

YOUNG HECTOR.

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to I. I. HITCHCOCK, American Farmer Establishment.

GRASS SEEDS.

Perennial rye grass, at \$1 a bushel.
Poa pretensis (fuztop) for lawns, at 25 cts a quart.
Tall Meadow Oat Grass at \$2 50 a bushel.
Orchard Grass at \$3.00 do

For sale at this Establishment, by
I. I. HITCHCOCK.

SPLENDID DAHLIAS.

A splendid collection of double, semi-double and single Dahlias, of all colors, from pure white and pure yellow, to deep scarlet and crimson velvet, and black, for sale by the subscriber, price 12½ to 25 cents for single flowering, 50 to 75 cents for semi-double, and \$1 each, for double. Persons wanting them may depend upon having a choice selection made by me. Orders may be left at the office of the Turf Register, or forwarded by letter, to GIDEON B. SMITH, Baltimore, Md.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address I. I. HITCHCOCK.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to I. I. HITCHCOCK,

Aug. 30. Amer. Farmer Establishment.

MORUS MULTICAULIS,

(New Chinese Mulberry.)

Of this tree, unrivalled in its excellence for feeding silkworms—quick in its growth and hardy in its constitution; yielding far more nutriment for the worm in the same bulk than any other tree known, and making silk of a very superior quality—a full supply will be furnished at this establishment, at seventy-five cents each: seven trees (including packing) will be sent for \$5, and fifteen for \$10. The trees will be ready for delivery 1st of November.

I. I. HITCHCOCK,
American Farmer Establishment.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK,

DEVON AND SHORTHORN CATTLE, and other Superior Stock, for sale.

To be sold, at the Three Tuns tavern, on Saturday, the 16th day of November, at 12 o'clock, a variety of Cattle, of the Devon and Shorthorn breeds of pure blood, and superior in quality, consisting of

- 1 Devon bull, 4 years old.
- 4 do 2½ years old.
- 2 bulls, half Devon and half Shorthorn, one 2½ years old, the other 1½ year.
- 3 Devon heifers, 18 months old.
- 3 Devon bulls, 15 to 18 months old.
- 4 Devon heifers, with bull calves, from a Shorthorn bull.
- 4 bull calves, half Devon, half Shorthorn.

The famous bull Tecumseh, is the sire of all the above Shorthorn offspring.

- 6 Devon cows, in calf by a Devon bull.
- 6 rams, of the Bakewell and Southdown blood—the Bakewells are of the stock of Mr. Barney.

1 colt, of very fine promise, 2 years old in June, upwards of sixteen hands high—from Mr. Willis' horse.

2 colts of the Tom breed, one 16 months old, the other, 2 years four months.

A Jack of the blood of the Knight of Malta, and the Royal Gift—about 13 hands high, and of very great bone, a fine foal getter.

A Mule, the colt of the above Jack, 14 months old.

The above stock has been raised on the estate of Brooklandwood, the residence of R. Caton. Apply to

EVAN HUGHES, Manager, or
H. W. BOOL, Auctioneer.

Balt. Oct. 18.

AGRICULTURAL IMPLEMENTS,

Seeds and Fruit Trees.

SINCLAIR & MOORE, corner of Pratt and Light streets, offer for sale a general assortment of the most approved kind of PLOUGHS of various sizes and patterns—both with wrought and cast shears—also, extra shears and heels to supply the demand for old Ploughs.

CYLINDRICAL STRAW CUTTERS of the following sizes and prices, viz.—11 inch box, \$27—14 inch do. \$45—16 inch \$55—20 inch do. \$75—this last size is a very powerful machine, and is adapted to horse or water power, but may be used advantageous by hand. The smallest size of these boxes will cut 300 bushels per day, the 14 inch box will cut about 700 bushels per day—also, common straw cutters at \$5 to \$7 50.

CORN SHELLERS with vertical wheels, the most durable and efficient kind—Lanes' Patent THRESHING MACHINE and HORSE POWERS—Improved WHEAT FANS, Harrows, Shovels, Spades, Mattocks, Picks, Brier Hooks, Cast Steel Axes of superior quality, &c. &c. Clover, Timothy, Orchard Grass, Herds Grass, Tall Meadow Oat Grass, Lucerne and White Clover Seeds.

FRUIT TREES, a great variety—Catalogues to be had at our store.

N. B. The inconvenience and expense of collecting small accounts at a distance has induced us to adopt as a general rule of business, that all small bills must be settled in cash or town acceptances on delivery of the articles—a discount in prices will be allowed for cash, where the articles purchased are of sufficient amount to be an object.

FRUIT TREES.

The subscriber has the sole agency in this city for disposing of FRUIT TREES, from the Nursery of Mr. Samuel Reeves, of New Jersey, which establishment has gained a high reputation for the quality of its trees and their fruit, a specimen of which can now be seen at my store. He will also receive orders for fruit trees, to be furnished by Mr. Saml. Gray, whose trees are already well known in this vicinity, orders for this season should be forwarded immediately.

J. S. EASTMAN.

N. B. In store SEED RYE, of prime quality, and also red chaff and red bearded WHEAT. J. S. E. Oct. 25.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 3.00 a 5.00; do ground leaf, 5.00 a 9.00.—Crop, common, 3.50 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 379 hhd. Maryland; 17 hhd. Ohio; and 2 hhd. Pennsylvania—total 398 hhd.

Flour.—Best white wheat family, 6.75 a 7.25; 2d quality, 6.25 a 6.75; super Howard street, 5.62½ a 5.75; (wagon price, 5.50, a —) city mills, 5.62½ a 5.75; city mills, extra, 6.12½ a —.—CORN MEAL, per 100 lbs. 1.50 a 1.56.—GRAIN, red wheat, 1.12 a 1.15; white do 1.15 a 1.25.—CORN, yellow, 65 a 66; white, 62 a 63; in the ear, 2.50 a — per bbl.; RYE, 70 a —; chop rye, per 100 lbs. 1.56 a —.—OATS, 33 a 35.—BEANS, 1.00 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 95 a —.—CLOVERSEED, 5.00 a 6.00.—TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—Lucerne 37½ a —.—lb.—BARLEY, 75 a —.—FLAXSEED, 1.37 a 1.50.—COTTON, Va. 14 a 15; Lou. 16 a 18; Alab. 14 a 16; Tenn. 14 a 15; Upland 15 a 16.—WHISKEY, hhd. 1st p. 28½ a —; in bbls. 29 a 30½.—Wool, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$170 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 38 a 40.—Plaster Paris, per ton, 4.00 a —; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.75 a 5.50.—Oak wood, 3 00 a 3.75; Hickory, 4.50 a 5.00; Pine, 2.50.

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THE FARMER.

BALTIMORE, FRIDAY, NOV. 15, 1833.

MANGOLD WURZEL.—The New England Farmer informs us, that there is at its office a beet of the mangold wurzel variety, which weighs THIRTY-SIX POUNDS AND FOUR OUNCES. This is indeed "a super superb beet." It was raised by Mr. J. A. Kenrick, of Newton, Mass. We have seen no individual beet equal to it, but we challenge our Yankee neighbors to a comparison of *patches* if they dare, and will give them Sam Patch and all his connections into the bargain; retaining of his, only the position which Sam so well established, sealing the truth of it even by martyrdom, viz: "that some things can be done as well as others." Now for our patch. Our fellow citizen Henry Thompson, Esq. who recently sent us two beets, the weight and dimensions of which we published, informed us last week, that he had just drawn from the ground and secured his crop of mangold wurzel, and that in doing this, he took pains to measure off a square, 12 by 36 yards, and weigh the produce. And what think you, gentle reader, was the result? Friend, of the New England, *guess*. And in doing so make due allowance for a very unfavorable season for this crop, and on the other hand *calculate* on one of the most skillful and best farmers in this vicinity. Do you give it up? Five and three-quarter tons! *al most*; yes, five tons, 14 cwt. and 3 qrs. of the very best of food for live stock, especially for milch cows, from less than *one eleventh of an acre*, or at the rate of about sixty-four tons to the acre. Now this crop is neither more difficult nor more costly to produce, than Irish potatoes. Is it any wonder then that our friend Thompson, should have fine cattle? His Devons always look as if they were covered with satin, and he gets a hundred dollars a piece for his calves, which cost him to produce them, little if any more than would those of common blood. But hearken to his own statement, which he has furnished at our special request for the edification of our subscribers.

"The mangold wurzel was planted early in May, in drills 2 feet apart, and when well above ground, was thinned so as to leave the plants about 6 inches from each other; they were cleaned with a small one horse plough three times, the first turning the earth from the plants, the second time moving it towards them, and the last merely cleaning out the middle; they were afterwards hoed occasionally, merely stirring the earth, for the summer was too dry for many weeds to spring up; the ground was in fine tilth and manured with rotten dung ploughed under early in the spring.

"Total weight of the piece measured, say 12 by 36 yards, 5 tons, 14 cwt. and 3 qrs. of plants perfectly sound.

"My ruta bagas are a very fine crop, notwithstanding our dry summer, they were sown broadcast on the 24th July, the ground in fine order and well manured, they were twice hoed and afterwards thinned by hand, not a weed can now be seen in the field, the tops covering the whole surface and are now growing beautifully."

We have examined the subject brought before us in a special manner by the queries of an amateur, and after seeking for the opinions of various writers on fruit trees and orchards, we give the following as our belief—"Does the intermixture of farina affect the fruit then in embryo, or does it only affect the seed of the fruit?" Our opinion is that it affects only the seed of the fruit, not the fruit itself. The farina or pollen is the vivifying principle, without the action of which, the seed would not arrive at maturity. It consists of minute granules which are hollow, their internal cavity being filled with a fluid, floating in which have

been discovered still more minute particles of various shapes, spherical or oblong, which appear to possess a SPONTANEOUS MOTION! Take, for example, the yellow dust from the anther of a lily, every grain of it is a hollow globule, a balloon, filled with the fluid containing the moving particles above mentioned. On the other hand, the stigma (belonging to the other set of reproductive organs) is composed of tissue, having many intercellular passages; below the stigma is seated the ovarium, containing the young seeds or ovula, with which the intercellular passages communicate. Now, the mode of action of the vivifying principle is this: when a grain of pollen falls upon the stigma, it bursts and discharges its contents on the loose tissue of that organ; the "moving particles" descend to the ovarium, and find their way through various passages, "specially destined by nature for this service" to the ovulum or young seeds. When there "the particle swells, increases gradually in size, separates into radicle and cotyledons, and finally becomes the embryo, that part which gives birth, when the seed is sown, to a new individual."† Such being the course of the pollen, it is obvious that it has no direct influence on the fruit.

It will perhaps be asked, why does it happen, (if the pollen have no influence on the fruit itself), that when there has been no impregnation, the fruit drops off and *vice versa*?

We answer, because the fruit shares the fortune of the seed itself. The seed is the primary object in the economy of nature. The whole course of vegetation is directed to this one grand object—the preparation for a future progeny, the reproduction of the species by the perfecting of the seed; the seed is in reality the fruit proper; what we have termed fruit in this article being merely the protective organs designed to defend the infant fruit or seed from injury, as is implied by the very name botanically applied to the pulp of the apple, peach, &c., *pericarp*—(*peri*, about; *karpos*, fruit.) When the seed is impregnated, it swells and advances towards maturity, and the protective apparatus must grow and advance with it. If impregnation do not take place, the protective apparatus, (fruit as it is termed commonly) may grow for a time, but it bears death within its heart and soon drops off.

The instance brought by "An Amateur" does not exactly apply. A mixture of pollen or farina, between a Pomme d'api and a St. Germain pear would not affect even the seed, for cross impregnations will not take place between the apple and pear. But we do not believe that between two apples or two pears, a mixture of farina would have the effect of changing the flavor of the fruit. Even among the "melon and cabbage tribes," this effect is not produced. We have been familiar with cross impregnations, in the melon particularly, and have never been able to observe it. Often we have saved very carefully the seeds of a fine and richly flavored nutmeg cantaloupe, and, to our disappointment, found that the fruit produced from them was a worthless hybrid, bearing strongly the features of its two parents, one of which was the fine nutmeg, and the other an inferior sort.

We thank our friend H. W. W. for his well timed recipes which will be found below. That for pickling red cabbage may be satisfactory to our friend who inquired for a method last week.

PONE BREAD AND RED PICKLE CABBAGE.

MR. HITCHCOCK:

Nov. 9th, 1833.

Sir.—You having several times invited the readers of your paper, as well as others, to give their ideas of the different modes of *practical* agriculture and domestic economy, I have thought I might put in my mite, should it be in place, and communicate, for the benefit of many young housekeepers, the manner of

*Lindley. †Id.

preparing two very essential articles for family use—good pone bread and red pickle cabbage. In Maryland, Virginia, and many other states, corn is the principal article used for bread; yet of the many who use it, how few, comparatively know how to prepare it. This recipe may be considered superfluous by some persons, I nevertheless think that it will be tried by some tyro in housekeeping as a new article.

RECIPE.—Take as much corn meal as is wanting for use; sift it through a hair sifter; put it in an iron pot, and pour on it boiling water; stir it with a spatula or ladle till it becomes well mixed and quite thin; this being night, let it remain in the same vessel till morning, and if kept warm it will be well fermented, (which is necessary;) then put it in what is called a Dutch even, it being hot before the dough is put in it; apply good live coals on the lid of the oven and under it, being careful not to burn the bread. When thus prepared, if done carefully and according to this recipe, more wholesome and better bread cannot be used for breakfast. I think it anti-dyspeptic, as no lard or butter is used in preparing the bread, though after it is cooked good fresh butter adds to its flavor.

RECIPE FOR MAKING RED PICKLE CABBAGE.—Take as many hard heads of cabbage as are wanting; slice them thin; spread a clean cloth on a board and place a layer of cabbage thus cut, and a sprinkle of fine salt, and so on till all is put on the board; again put a napkin over it, then another board and a few hundred pounds weight on the board; let it remain two or three days in this manner; take a parcel of pokeberries and squeeze the juice out of them; boil the juice together with some strong cider vinegar, adding during the process of boiling a little unground allspice. The cabbage may be put in stone pots, in layers, and the vinegar poured on it. It is then fit for use, and a superior pickle it is, both as to flavor and color, being a deep red. Time of making is between the middle of October and middle of November, or before the pokeberries* are gone. Yours, H. W. W.

I am now about trying an experiment on my peach trees, to kill the worm that disturbs its roots, which, if it proves successful, shall be given to the public. It originated with a very old woman, who tried to kill her neighbor's peach trees secretly; but they proved more thrifty than before, and produced fruit astonishingly.

[We shall be glad to hear from H. W. W. in regard to his experiment on his peach trees. Would that every old woman's malice might be turned to as good account as that of her he mentions.]

INTERNAL IMPROVEMENT.—The New York Journal of Commerce states, that the Delaware and Raritan Canal, running from New Brunswick to Bordentown, will be open for navigation the ensuing Spring. When this is done, not only will sloops be able to ply between New York and Philadelphia by going half the distance which they are obliged to go at present, but they may run from Stonington, Conn. to the interior of North Carolina without once entering the open sea. The course will be through Long Island Sound and the harbor and bay of New York and Princess Bay to New Brunswick; thence through the Delaware and Raritan Canal, about thirty miles, to the Delaware river; down the Delaware to Delaware city; thence through the Chesapeake and Delaware Canal, 13½ miles, to the head of Chesapeake Bay; down Chesapeake Bay to Norfolk; thence through the Dismal Swamp Canal to the interior of North Carolina.

* Could we not dispense with the coloring matter here recommended? The very name of "pokeberry juice" is rather alarming; it reminds one of certain compounds which are sold under fair and goodly names, as "L. P. Port," &c. but which make sad havoc in the internal economy of those unhappy mortals who use them.—Ed. Am. Farmer.

AGRICULTURE.

ADDRESS

Delivered before the Rockbridge Agricultural Society, at their Show and Fair at Fancy Hill, on the 16th October, by Doct. ROBERT R. BARTON, President.
Gentlemen of the Agricultural Society:

With the honor conferred on me, you have annexed a duty I feel but ill qualified to discharge with satisfaction to you, or to myself.

With characteristic procrastination, I have neglected any attention to this subject until almost the eleventh hour. I most therefore throw myself upon your kindness and ask your indulgence whilst I offer a few crude and hasty remarks.

We have organized ourselves into a society for the second time, and having put my hand to the plough, I will not offer you so poor an example, as to be the first to look back, from a fastidious apprehension of criticism. We have associated ourselves together in a noble cause, and I do hope no member of our body will be deterred by such paltry considerations from offering to the society the first fruits of his observation, or the result of any experiment he may have been induced to make, connected with agriculture. One of the most important benefits resulting from agricultural societies, is the concentration of knowledge—the bringing to a focus, as it were, the experience and observation of each individual composing it. And, gentlemen, from my acquaintance with all of you, I hazard nothing in saying, there is not one who is not able to bring to this society some useful fact, or hint, which, if added to the general stock, will be valuable to all. Each one of us has his hobby: one prizes himself, perhaps, upon his deep ploughing and fine crops of corn; another, on his wheat and the mode of seeding it; a third, on the fine blood and appearance of his horses; whilst another, perhaps, excels in the general management of his meadow and his cattle. All excel in some one province or other, and all may be enlightened and benefited by concentrating the knowledge thus diffused through the general mass. The science of agriculture is boundless, and no one can be expected to be thoroughly acquainted with the various branches connected with, and subservient to it. Natural history and philosophy, chemistry and botany, contribute largely both to the pleasures and success of agriculture. And is it not to be lamented, that the knowledge of a subject so expansive and boundless as agriculture confessedly is, should be so much neglected, and if taught at all, should be taught by those who plough, and sow, and reap, as their fathers did before them, without knowing why or wherefore? What would be thought of, or what could be expected of a man who without reading and study, or any previous preparation, should attempt the practice of medicine, or of law? He might, with great industry and attention to business, make a support; but without he possessed uncommon powers of mind, he would still be a charlatan, or a pettifogger, always eulogized by an imperfect knowledge of his business, without the power to rise to distinction, or shed a lustre upon his calling. And it is to this lamentable neglect of previous preparation, that agriculture, one of the noblest pursuits of man, and to which all others are more or less dependent, has not attained that pre-eminence to which it is so justly entitled.

But, gentlemen, I should not advise, nor is it necessary that much time should be devoted to the acquirement of the mere *theory* of agriculture. A few hours reading during our long winter nights, would soon teach us the best mode of correcting the sterility of this soil or that, by adding vegetable matter to the one or subtracting it from the other. The one, perhaps, requiring nothing but the application of barn-yard manure; whilst to the other, lime in its *caustic* state, is indispensable. On the other hand, caustic lime would be ruinous to some soils, and yet highly

beneficial in its mild, or effete state. Nor is it less important we should be able to select that species of limestone best fitted to the amelioration of the soil; that containing magnesia being decidedly injurious. Even in the application of common stable manure, we all err from the want of a little chemical knowledge. What is called *surface* manuring has lately come much into vogue, and instead of confining its fertilizing gasses *under* the surface for the immediate nourishment of the growing crop, it is spread to the four winds of Heaven,—or, in the language of the poet, with an allowable amendment,

“To waste its virtues on the desert air.”

Thus the ammonia and other volatile ingredients, so pungent to the olfactories and to the eyes, and almost the essence of its fertility, are wasted, and probably at least 50 per cent. of the advantage to be derived from its judicious management, lost to the soil. Chemists too, have shown, and in this they will be sustained by all practical farmers, that a large portion of the strength of manure is wasted by exposure to the sun and air, and suffering the fermentation to become too great before it is removed from the barn-yard. We are all familiar with the fact, how much the bulk is diminished in the course of a few months. Theory teaches, and experience will prove, that it is most advisable to haul it out and plough it under during its incipient state of fermentation. In all cases it may not be most beneficial to the growing crop; this will generally be the case; but what is far more important, it will always be the most permanently beneficial to the land. This, however, is not the only error in our system, and I hope you will appreciate my motive, whilst I hint at some others. The task of finding fault and detecting error, is an invidious one, but much easier than the application of the appropriate remedy. But I hope you will always find me ready to render my feeble aid towards correcting as well as pointing out the defects of our system. In the first place then, I will remark, we all cultivate *too much land*. Half the quantity, well managed, and cultivated on the Pennsylvania or New England system, would yield us double the product, whilst the balance of our farms might be set in clover and other grasses, and be improving even under *pasture*. From 40 acres of wheat land, a northern farmer will generally expect one thousand bushels, or at the rate of 25 bushels an acre.* Yet there is not one of us who averages the half of this, with a soil equally good, naturally, with only a little difference in climate in their favor. But even in corn, to which our climate is decidedly more congenial, they can and do excel us. I am willing to allow them some advantage in having white labor to work their lands; but still the difference is too much against us, and as we cannot substitute the white for the species of labor, which is certainly the bane of agriculture and the general prosperity of our country, yet we can bestow the same labor on *half* the quantity we now cultivate. When we compare the difference in the profits of agriculture, both in Europe and amongst our brethren of the north, with those of the southern and middle states, our ambition will be roused and a determination excited, both for the sake of patriotism and individual interest, to imitate the good example they have set us.

In England, we are told, the annual produce of their lands is often worth from \$30 to \$40 per acre, and rent annually for a sum sufficient to purchase three or four acres in our country. But there, when a farmer lays out \$10,000 in the purchase of land, he always expends several thousand dollars in the purchase of lime, marl, &c., which cost them about double what the cost with us would be. (And here I would remark, that large beds of shell marl abound in this county, in the neighborhood of Mr. Weaver's forge, Mr. Baggs', and Mr. Pogue's, which, if hauled to the clay hills, would richly reward them for their labor.)

* This is on a clover lay.

Capital is considered as indispensable to the English farmer, as it is here to the merchant; and they always expect their profits to be in the ratio of the capital expended in improvements, yielding them generally from 10 to 15 per cent. In Italy, where their farms are still smaller than in England, averaging from 5 to 10 acres, tenants can afford, and do pay to their landlords, one half of the products of the soil. And in Flanders, where, perhaps, agriculture has been carried to as high a state of perfection as in any other part of the world, the quantity produced per acre would be considered incredible.

To what then is this difference ascribable? It cannot fairly be attributed to climate, or to soil, for in both nature has been bountiful to us; and however mortifying it may be, we must admit it is mainly owing to our wretched system. We must cultivate less, and cultivate better. Plough deep, that our crop may not be drowned in wet seasons, and that there may be a receptacle for moisture, when too dry. If your soil be too stiff, lime it, or use marl, or plough and expose it to the action of the winter's frost; or what, perhaps, will mellow it still more effectually, turn under a green crop of clover. By one mode, you have it prepared for your spring crop of corn, or oats, and in the other it is exactly in the right state for a crop of wheat, which is nourished and supported through winter, by the fermentation and decomposition of the clover. If too loose and permeable to the action of the sun, deep ploughing and lime are still the appropriate remedies. Our loose lands have generally a substratum of clay, and by deep ploughing, sufficient tenacity is readily given to the surface soil. If too sandy, a few loads of clay is the best manure, and will soon correct the evil; and we all know a union of sand and clay will form that stiff soil called mortar.

But I have not touched on a subject, perhaps of the greatest importance to the farmer. I mean the alternation, or as it is more familiarly called, the rotation of crops. From the want of due attention to the regular succession of our crops, much labor is lost, and our fondest hopes frequently blasted; and there cannot be a more convincing evidence of bad farming, than the growing of two successive crops of the same kind on the same ground. Wheat may succeed after wheat, and corn after corn; but this does not prove it to be right. It merely proves how bountiful Providence has been, to supply us with a soil which will stand so murderous a system. I know not that it matters much whether corn be followed by wheat or oats, provided it be planted on a clover lay, or an abundant supply of manure ploughed in, until our fields are better set with clover. But one or the other is indispensable to insure the succeeding crop, and the steady improvement of the land. We may, then, follow corn with oats, that with wheat, and lastly, with rye, sown the last week in August, or first week in September, with clover, or what is better, with clover and timothy mixed. A crop of clover is then succeeded by four grain crops; and this advantage may arise from oats, instead of wheat after corn, that more *time* is allowed to us. We are sometimes compelled to cut our corn too soon, or to postpone the wheat crop too late. The chief danger, I apprehend, would be, that not being under the necessity to cut up our corn, it would be neglected, and much valuable provender lost, and without which the barn-yard cannot be properly supplied with manure. One of the evils of wheat after oats, arising from the volunteer growth of the latter, may be avoided by pasturing hogs and other stock, immediately after harvest, harrowing it soon after, and then giving it a deep ploughing about the middle of September just before sowing the wheat. In this way, what is left by the stock is buried beyond the reach of vegetation. But we raise too much corn and too little wheat. We ought therefore to divide our farms into seven or eight fields, so that we could select one of the poorest every year, which had been laying three years in clover, to follow up in Septem-

ber, and harrow in wheat.* And by following this again with rye, the clover seed of the previous crop would be brought to the surface, and the labor and expense of sowing be avoided. This system differs widely from the four-field shift system of Mr. Carter of Shirley, to whose valuable communication on the subject of the rotation pursued by him, I would beg leave to call your attention. You will find it in the 3d No. of the Farmers' Register, an agricultural periodical, ably edited by Mr. Ruffin, author of a work on calcareous manures, that ought to be read and studied by all of us—and I am sure I could not do you a better service than by inducing you to take the Register above alluded to, or any other ably conducted paper on agriculture. Reading of this kind will excite observation and inquiry—will elicit new ideas on this subject, and as we are now half a century in the rear of agricultural improvement in other parts of the world, enable us with rapid strides to take that station to which our general intelligence, and the fertility of our soil, entitle us.

I will detain you a little longer on the subject of grasses. These have been too much neglected by us all. Our rich soil, if not better employed, will throw up rank and noxious weeds, and though under the system recommended, every field will be constantly in clover, or in grain, yet occasionally there will be a partial failure of the former; and we ought to mix some other grass. Timothy answers the purpose better with me, than any other I have tried. I am confident I have added a fourth, perhaps a third to the quantity of my hay, by this admixture. It seems to support and sustain the clover, and, if we cannot get through our mowing before harvest, it shades it, and still enables us to turn a heavy swath after we have disposed of our wheat. For pasture, the advantages will at once strike you all. Moreover, I conceive the timothy a clear gain, as it does not seem to interfere with the clover, and only occupies the place of weeds, or less valuable grass, particularly the third season. The soil requires a change of grass, as well as grain, and affords nutriment peculiarly adapted to each variety. And here, as in most other instances, nature indicates the proper course. Most of us, no doubt, have observed the regular succession of weeds and plants, in our fields, left to a state of nature. It is even said, the common mushroom will not grow two successive years in the same ground. Let us profit, then, by the hint, both in our grain and in our grasses. I have, however, omitted to mention what I esteem, and it is so esteemed both in Pennsylvania and Maryland, a valuable grass; I mean the orchard grass. I would not recommend it in our fields which are to undergo a regular rotation; because it will improve for ten or a dozen years, and it grows in such tufts as to render the ground difficult to be ploughed. But for lots, and all who have not them, ought to have three or four convenient to their barnyards, for soiling until the pastures get a fair start in the spring, it is an invaluable grass, both for late and early calves and colts; it grows equally as well under the shade, as in exposed situations; and is extremely well adapted to orchards, if any grass is admissible there, and to groves of every description. It would be well adapted to groves of locusts; and I am glad to see your attention has been called to the rearing of this valuable species of timber, by one of the worthy members of this society. Some of us, too, have small spots of ground too wet and marshy for cultivation, and these are peculiarly adapted to what is called herds grass,† or red top. But it is said, there are upwards of 200 grasses, and surely out of this number we can find some adapted to every variety of soil, and probably no country can boast of such a

variety as Rockbridge. But, gentlemen, a new spur must be given to agriculture, before we can profit much by the natural advantages we possess, and which have been most bountifully lavished on us. We must emulate the north, particularly New York, where an agricultural society is supported in almost every county, diffusing intelligence, and consequently wealth, into every corner; for in nothing else is that axiom more correct, that "knowledge is power," and without it the farmer is frequently groping in the dark. It enables him, with but little labor and expense, frequently to accomplish what might otherwise present insurmountable difficulties. It was before observed, we must, like the industrious bee, pick and cull from every source, and bring to the general store. What would be impossible for any one of us to effect, will be easy, by associating together and exchanging views and comparing the experience of each. But the utility of agricultural societies is too obvious to require further elucidation. Physicians, more jealous of each other than any other class, associate together for mutual improvement, and to advance the interest of all. So of lawyers, the clergy, mechanics, and all. And is it not more incumbent on us in whose prosperity all are so deeply interested? The farmer is certainly the most important link in the chain which binds society together. When his interest droops, all must sympathize, and all must be depressed; and when he is prosperous, life and animation is imparted to the whole community. The statesman, the warrior, and the professional man, all long for the happiness and innocent pleasures of rural life. In ancient times, Cincinnatus exchanged his sword for the ploughshare and pruning hook; and our beloved Washington, great, both in the cabinet and in the field, most gladly retired to the peaceful and quiet pursuits of his farm.

But after all, what avails it, that we have a fine climate and fertile soil, intersected with two noble streams, and abounding as it does with much mineral wealth, if half our produce is consumed, to get the other half to market? While we turn our attention to a more judicious system of crops, we must keep an eye steadily fixed on the improvement of the great thoroughfare nature has given us to market. Who would hesitate to give a portion of his profits to its improvement, when both patriotism and individual interest, so loudly call for it? Such an improvement as is contemplated by the charter to the James River and Kanawha Company, most liberally granted by our legislature, would soon reduce the freight to less than one-half it now costs us, and a new source of wealth would soon be opened to us in the quarries of limestone and marble,* found so abundantly through our county. It is a fact which, perhaps, you are all not apprised of, that Richmond is almost entirely supplied with lime from New England, and often at a cost of 50 cents per bushel; while the cost of it here would not exceed 3 or 4 cents. But besides, we abound in iron, and it is not improbable, in copper and lead;† and judging from the formation of our country, I would expect to find stone coal, and, perhaps, salt and gypsum. The last is indispensable to the raising of clover, and if not found amongst us, must still be brought from Richmond at an expense of about \$20 per ton, until our rivers are improved.

In conclusion, gentlemen, I would remark, that many of us will be competitors to-day for the premiums to be awarded by the society, and it is impossible all can succeed, I hope therefore we will profit by the lesson taught us by one of the ancients, who, when turned out of office, with genuine love of country expressed his pleasure that a better man could be found in Sparta; and we, too, ought to rejoice, that one of

our neighbors can exhibit an article even better than the one we prided ourselves upon. Our committees have been carefully selected for their judgment, and being all honorable men and more impartial than we, certainly we will cheerfully acquiesce in their decision.

In this imperfect address you will observe many things of vital importance to the farmer, have been overlooked, or merely glanced at. But I hope they will be treated at large, by my worthy and able colleague, who is more accustomed in expressing his sentiments before the public.

One word more. I am in theory, and am *practically* in favor of rotation in office; and now cheerfully resign the honor you have so kindly conferred on me. I hope you will find a better man—none, certainly, who has the interest of agriculture more at heart, but many more able to expound its cause.

(From the Columbia Hive.)

GAMA OR SESAME GRASS.

An interesting article on this luxuriant and singular grass will be found on our first page, containing both scientific and practical hints. This grass, it seems, is a native of most or all of the southern states; but unless lands are enclosed, the grazing tribe will not permit it to rise into notice.

The editor of this paper, while engaged in the more agreeable pursuits of agriculture, admired the rich luxuriance of this native grass, whether growing on the wet stiff clay or barren sand hill, and observing how little choice it seemed in point of fertility as well as moisture (it not being subject to drown and yet resisting drought beyond any other grass,) he planted it in horizontal rows across a washed hill-side, which appeared to be a perfect mass of decomposed granite, perfectly destitute of vegetation. It soon took root, and began to cause a lodgment of earth brought by the rains, when some hogs which were confined in the same field destroyed it on account of its roots, which are large and abundant. On another red clay wash, on the side of a hill as barren of vegetation as a rock, it was planted and grew with comparative luxuriance.

It gets hard and coarse with too much age, and in that state is not much relished even by mules; and it should therefore be cut in a more tender state to which a more fertile soil will doubtless materially contribute.

Notwithstanding the gama grass at this time occupies the most prominent place in newspaper discussions, excepting steamboats, railroads and nullification, from the experiments and observations made by the editor of this paper, its greatest value will consist in converting to valuable pasturage the numerous old fields, which through injudicious tillage we are constantly abandoning to barrenness, briars and sedge. The richer soils will hardly be spared from cultivating crops, to a grass that will succeed on the poorest soils to the production comparatively of an abundant crop.

Though the gama is a summer grass, its root is perennial, and is the last of that family to leave us in the fall and the first to meet us in the spring.

A correspondent of the American Farmer, dated August 20, 1826, calculates that it is quite possible, if not reasonable, that the first cutting of a single acre should yield 103,890 lbs. of good dry hay, and the second cutting 100,000 lbs.

SHOEING HORSES.—From a report on agriculture in Flanders, we learn that, in that country the method of shoeing horses, is far superior to the English method. The shoe is so formed that the whole of the foot has a bearing. This strikes us to be necessary. Whereas the English farriers' shoe causes a bearing only on the edge of the hoof. To this is attributed many of the incurable lamenesses to which the horses of this country are subjected, such as corks, thrushes, contracted heels, &c.

* In a country abounding, as ours does, with fine rail timber, the labor would be counterbalanced by the many advantages arising from 7 or 8 distinct enclosures.

† Timothy, in New England, is frequently improperly called herds grass.

* Large quantities of pink, blue and grey marble, are found in the neighborhood of Mr. Dontho's Forge, and on several farms in the southern part of the county.

† Both are found in several situations on the Blue Ridge, more particularly in the neighborhood of Thornton's Gap.

[The following, extracted from the Genesee Farmer, is one of the Reports made to the Wheatland Agricultural Society, in the state of New York.]

REPORT ON TILLAGE.

BY MR. JOHN McVEAN.

The object of tillage, is to pulverize the soil, decompose and reduce its vegetable matter, increase its fertility, by the successive exposure of its parts to the influence of the atmosphere; reference being had to its progressive improvement and continued capacity, to produce the greatest crops of cultivated plants. To the successful pursuit of agriculture, it is indispensable that the operation be well performed; pulverizing and reversing the soil effectually, to an uniform and sufficient depth; that the vegetable decomposition may pervade and expand the whole mass; stimulating it to the germination and vigorous growth of the crop; the produce being generally more in proportion to the weight of the soil which is tilled, than to the surface which is run over.

On this subject, however, your committee cannot hope to suggest any improvement; the practical tillage of our own farmers being, perhaps, unsurpassed in any section of the country.

As respects the most proper time of applying tillage, for various crops, I believe it is generally conceded, that the fall is the best time to plough for certain spring crops, as oats and barley, especially on heavy lands, as they are seldom dry enough in season for spring cultivation; and moreover the winter frosts have a fine effect in pulverizing such soils, and likewise in restoring them when ploughed wet in the fall.

Corn has been very successfully cultivated with one efficient ploughing applied immediately before planting; I believe this to be a very good practice; and much preferable to fall ploughing.

Fall ploughing for wheat is improper, under common circumstances; and land should perhaps never be ploughed when very wet; although a certain degree of moisture is beneficial, in decomposing the sod of old meadows and pastures; and such lands if not better applied to corn, will bear and even require earlier cultivation as fallows, than stubble or recent clover lay.

There is some reason to believe, that lands of a light, hot, gravelly mold, may under some circumstances, be improved, by applying the last ploughing for wheat, when the land is wet, as it gives them additional weight and firmness, so much required by that crop. There is but little such land however in this section, and as a general rule, the drier the land when ploughed, the better.

The proper depth of tillage must be governed by the nature and state of soils, and the crops to be produced. As my agricultural experience has been confined to the soil of this section, I propose, before remarking more particularly on this subject, to offer my opinion with regard to the nature of our soil. Promising that when not otherwise specified, reference is had to the cultivation of wheat, this being the leading crop of our country.

I am not aware that the soil in this section which has been denominated Oak openings, is at this time essentially different from that of the wood or rolling uplands of the surrounding country, where both have been subjected to the same course of cultivation. Originally, however, this was not the case. An accumulated mass of vegetable matter covered the wood lands, which, when mixed with the soil, gave fair crops with imperfect cultivation, which might be performed among the stumps and roots with a single pair of oxen, and this without reference to the soil beneath.

With the Oak openings it was different. The annual burning of the tall grass which grew upon them by the aborigines, prevented the growth of timber, and also that collection of vegetable matter, which was found upon the wood lands, the whole surface presenting the forbidding appearance of naked barren plains. The soil was penetrated with fibrous roots of

grasses and ferns which sprung up annually, as well as those of willows, small oaks and hickory bushes, demanding, when first ploughed, the united strength of 5 or 10 oxen to urge the ponderous breaking-up plough through the stubborn soil, which might with propriety be called all sub-soil, with the exception of an inch or so at the surface, which consisted of matted crowns of grass, exhibiting the same uniform, unfruitful, lifeless appearance, and producing crops of wheat which would not exceed fifteen bushels per acre.

These were the discouraging prospects of the cultivator at the commencement of the Oak openings, but by perseverance, which overcomes so many obstacles, their labors were crowned with success. The soil has continued to improve in fertility beyond the expectations of the most sanguine operator, yielding at this time, thirty, forty, and in many instances, fifty bushels of wheat per acre, of a quality that has done much towards establishing in the New York markets, the superior character of Genesee Flour. This fertility of soil has been produced by the common course of cropping, and that without the stimulus or application of barn-yard manures; demonstrating that the soil possesses within itself, materials which will continue its productiveness under a proper course of tillage.

It may be inquired what has been the cause of this increased fertility of the soil.

The secondary causes have been, a constant attention to pulverizing the soil, and exposing it to the influence of the atmosphere, by a continued course of cultivation, and the annual additions of vegetable matter which has accumulated under a judicious course of cropping, by pasturage and stubble, but more especially by cultivation of clover and the use of plaster.

The primary cause and that on which rests its permanent fertility, and enduring capacity, is the nature and quality of the sub-soil, which while it allows a filtration of the superabundant moisture, is at the same time of sufficient tenacity to retain the fertilizing properties of manures, and by exposure to the atmosphere, may be converted into an excellent soil, to any depth that may be required. This convertibility of the sub-soil, into one of extreme fertility, and which characterizes the best wheat soils of this section, has often been remarked upon, and confirmed by the immediate productiveness of the sub-soil, which has been thrown from the bottoms of cellars and wells. What the cause of this immediate productiveness of the sub-soil is, can only be determined by chemical analysis. We can only draw our conclusions, as to the constituent principles by observing the relation that exists between causes and effect, and we fear that they are too often neglected by many, who unprofitably exhaust the shallow mold of the surface, by repeated workings, forgetful of the means of wealth, which lies beneath, yet perfectly at their disposal.

With the means of forming a soil of any required depth, at our disposal, the question presents itself—"how deep shall we plough?" In reply to this, I would say, "plough deep." A few good crops may be raised with shallow surface ploughing, on a rich soil, but when it becomes exhausted, in dry weather it will be found full of hard lumps and dust, and in wet, a clammy compound, injured if ploughed in that situation, or baked to hardness by drought, and accordingly the crops will be light and thin, suffering for want of nourishment as it approaches maturity, will be inferior both in quality and quantity.

On the other hand, when soils are ploughed sufficiently deep, the results are the reverse, in every particular. In wet weather it equalizes the moisture, and what is of more consequence, with our soils and climate, in dry weather, it resists the effect of heat, from its increased depth, retaining a sufficient quantity of moisture for the support of plants, or for the decomposition of vegetable matter; crops grow up thick and strong, surmounting better every vicissitude or change of climate, while growing leaving the soil enriched with a heavy stubble after

they are removed. Without seeding, such soils in this section, are soon covered with a thick crop of white clover, which much improves them for succeeding crops. The roots of our cultivated crops, rarely penetrate the sub-soil, therefore the advantage of deep ploughing must appear evident to every close observer.

In the spring of 1825, in searching for sand, I examined one of my fields in several places without success. The soil was that of our common Oak openings, and very much exhausted, as it had received only shallow ploughings. The best crop had been corn. As the sub-soil appeared inviting, I had the field ploughed in June, with a strong team, as deep as one of Wood's ploughs would work, adding at once, at least one-third, to the weight of worked soil. It was cross-ploughed and sowed at the usual time, and the crop was uncommonly good both as to quality and quantity. I have continued the same course of tillage upon that and other lands of the same description, as far as practicable and with similar success. It is true that some of the crops have been injured by the Hessian fly, others from the density of their foliage and the excessive heat of the season have lodged, but have not failed for want of nourishment. With these exceptions the results of the above course of tillage has been an improvement in the appearance and quality of the land, and a very great reduction in the cost of cultivation. Such also has been the results on neighboring farms, so far as I have been acquainted, where the same course of tillage has been adopted. Whether these beneficial effects will continue, and to what extent, time and further experience must determine. I have no doubts, however, as to the success, and am confident that the most favorable results will follow this course of cultivation on most of our uplands of the country. I would observe, that ploughing to this depth is not necessary at each time, as the intervening ploughings, to the wants and habits of the crops to be cultivated.

Having bestowed the most careful and serious consideration, upon the subject of deep ploughing as a general rule, whether with regard to the improvement of the soil, or the wealth or prosperity of the operator, I am convinced that the admonition of Poor Richard will apply to every farmer in this community.

"Plough deep, while sluggards sleep,
And you shall have corn to sell and to keep."

I am aware that there are small portions of uplands, which have loose, sandy or gravel sub-soils to which deep ploughings might prove injurious; and also larger portions of low, or cold, moist lands, where the sub-soil is a tenacious clay which would not be benefited by bringing up too much of it at any one time. These must be mixed by degrees, otherwise when the surface mold becomes exhausted, it will be difficult to sustain them in a productive state without the application of manures.

With regard to the frequency of ploughing, some difference of opinion has existed. It has been the common practice to commence summer fallows according to their extent, and the means which the farmer has at his command. Sometimes this operation has been commenced as early as April, but more commonly in May or June, and between that time and sowing the seed, the land is more commonly ploughed and harrowed two or three times. The extent to which this practice has obtained in this section, may be considered as proof of its utility, and doubtless in many instances it is quite necessary, not only for the purpose of rendering the sub-soil light and friable, but for destroying the noxious weeds which may have increased upon the surface. Frequent and deep ploughings were absolutely necessary in the early cultivation of our soil, which, as has been observed, in its original state presented a sterile, lifeless appearance proceeding from the absence of vegetable matter, and perhaps the presence of some acid in the soil which was unfriendly to vegetation.

This original state of the soil, has been so changed

by cultivation, that it cannot now be said to be the same that it was when first it was operated upon, and it now becomes an inquiry of importance, whether a different mode of culture should not be adopted in consequence of this change?

There are many circumstances which would induce a belief, that most of the soil with us has now arrived at that point of fertility, when frequent ploughings may not only cease to improve, but actually impoverish the soil. If it is admitted that soils can be injured by too frequent ploughings, then the inquiry will be, as to the amount of tillage, which will be found most profitable, both for the present crop and those which are to succeed upon the same lands.

That soils may be injured by too frequent tillage under certain circumstances, was demonstrated to me by the following experiments.

A field on which the preceding crop had been corn, of a heavy soil, was prepared for wheat by five ploughings, and eight harrowings, commencing in May, and given at intervals between that and the common time of sowing. This was in 1828, which season was rather wet, and the crop of wheat which followed was comparatively light, and the soil was so injured as not yet to have recovered its former fertility.

In 1832, an acre of wheat stubble which was infested with the plant, commonly called wild rye, was prepared for wheat, by five ploughings, commencing in June, and harrowed not less than twelve times. This extra tillage did not prove beneficial to the crop, in short it was inferior to that upon a part of the same field, which was rather grassy, and was only ploughed and harrowed three times. The effect upon the soil remains yet to be ascertained, but as the soil was of a fine friable loam, and the weather generally dry, I do not anticipate the result so unfavorable as in the first experiment.

There is no doubt, but that if a piece of land was kept as a fallow, for two or three years, with frequent ploughings, so as to exclude the growth of plants, it would have a ruinous effect upon the soil, by dissipating all vegetable matter, and leaving it in a state from which it requires years to recover it.

Do we not approach this, whenever we apply unnecessary tillage, or give our lands a greater number of ploughings than are necessary to subdue the grasses and pulverize it for the reception of the seed?

During the time that vegetable matter is undergoing decomposition, it has the effect to loosen, or expand the soil, fitting it for the extension of the young roots of cultivated crops, and also for the free circulation of the food of plants produced by the decomposition, but these effects are lost where a long course of fallowing is pursued, as the time of the greatest decomposition is past before seed is committed to the ground.

The object of tillage then appears to be, to prepare the soil in the shortest space of time required, to bring the vegetable matter, deposited in the soil, into that state when it shall act as food for the plants to be introduced, with the greatest effect. This I imagine, in most cases may be effected in less time than is generally devoted to summer fallowing, and so far as my observations have been directed to this subject, the most favorable results have followed short fallowing, both with regard to the crop and the after condition of the soil. When applied within the above limitation, frequent tillage may not be so exceptionable, yet even then by repeated exposure to the atmosphere, much of the vegetable matter may be dissipated which otherwise would be retained in the soil, as food for the plants to be cultivated.

Perhaps when our soils have been mixed to a sufficient depth, so as to render cultivation easy, the best system of tillage will be found, that which experiment has recommended, and which many of you now pursue, viz: to give but one deep ploughing for each crop, by which the vegetable matter from the surface will be placed in the best possible condition, to act, as a stimulant upon the crop, and the undecomposed parts retained to prevent future tenacity of the soil.

Should not this system of tillage, so plausible in theory, be attended with any unforeseen injurious effects, I can see no reason, why, by the use of plaster and clover, our soils may not only be made to produce wheat, in the greatest perfection our climate will admit of, but be increased in fertility to that extent, as to require to be reduced by those crops which draw a larger quantity of food from the soil.

(From the New England Farmer.)

POTATO BLOSSOMS.

MR. FESSENDEN—Sir, In the 5th vol. page 373 of the N. E. Farmer, you notice the statement of a writer in the Farmers' Magazine, a British publication, who among several other fine things, asserts "that in the drills where the flowers (meaning the potato blossoms) were gathered as soon as they appeared the crop was doubled, to what it was where the apples were allowed to come to maturity." You published this statement in 1827. I believe it had been previously published by Mr. Knight, that plucking off the potato blossoms would greatly increase the crop.

The present season I tried the experiment; and I will now give you the result.

I planted twelve rows of the Chenango potatoes all in drills of exactly sixty-five feet in length. Without any preference I drove a stake at the head of one of the rows, and from that row I carefully cropped the blossoms from day to day as they appeared. Last week I dug them, and from the row from which I plucked every blossom, I gathered 330 large, handsome Chenangoes fit for steamer—also 146 small ones fit only for my cow. One adjoining row from which no blossoms were taken produced 354, equally large and fit for the steamer, together with 129 small ones. The other adjoining row, from which no blossoms had been taken, produced 366 equally large and fine, together with only 92 small ones. So that my land, with exactly the same cultivation I have no doubt produced at least 8 per cent. more potatoes reckoning large and small, by leaving nature to herself. I pray you, sir, to recommend the same experiment to be tried by others, the next year, with different sorts of potatoes.

Charlestown, Oct. 25th.

INQUIRER.

WORTHY ATTENTION.

In England, economy is studied and understood; the most is made from each means of income, and the least waste is fully inquired into. The following from the Quarterly Journal of Agriculture will surprise many of our farmers:

WASTE OF CORN IN AGRICULTURE.—It is estimated, that only one third of the seed-corn sown on the best land grows: the other two-thirds are destroyed. The number of cultivated acres in Great Britain and Ireland amounts to 47,000,000; 30,000,000 of which are under the plough. Two-fifths of the latter, or 12,000,000 acres, are annually under the cereal crops. The average allowance of seed for the three kinds of corn may be stated at four bushels and two-thirds per acre. The quantity of seed annually sown thus amounts to 7,000,000 quarters. If two-thirds of this quantity are rendered unproductive by some agency which has hitherto been uncontrolled, then 4,666,666 quarters of corn are annually wasted! The quantity thus lamentably wasted would support more than 1,000,000 of human beings.

CULTURE OF SILK.—At the late Bristol Agricultural exhibition, four premiums were awarded for the white mulberry tree—and the whole number of trees entered for the premiums, was over 70,000.

One of the largest wool growers in New South Wales is Thomas Terry, Esq. whose property is estimated at £25,000. This individual once ranked as Tom Terry, the convict.

HORTICULTURE.

(From the London Horticultural Register.)

ON THE UTILITY OF BURNING CLAY, As a means of correcting the Soil for Gardens.

BY MR. STAFFORD,

Gardener to R. Arkwright, Esq. Willersley Castle, near Cromford, Derbyshire.

GENTLEMEN,—I now send you my promised method of burning clay; and as it has fallen to my lot to operate on that material twenty-two years out of forty-eight, I may, perhaps, claim some attention from those who may be inclined to correct that material. Nothing can be more unfortunate to the proprietor, and to the person whose lot it is to conduct a garden, when the site happens to be a natural strong clay, and as this so often occurs, it has always given me the utmost concern. Until lately a remedy has been out of the question.

An occurrence, however, took place some years ago, which forcibly convinced me of the important benefit that might be derived, from attention to the subject. The instance is this:—a Mr. Nightingale near this place, enclosed a piece of ground for a garden, of strong clay, and being acquainted with that celebrated agriculturist, Mr. Toller, of Betley, Staffordshire, he asked his opinion on the subject, who advised him to let the whole be burnt, which it was done in a few weeks; and a work was completed, I may say, in a few days, that never could, otherwise, have been done in his whole life-time, that is, he rendered the ground prolific; and I never witnessed better success in crops, than I have done of every crop that has been planted in this composition.

A gentleman who had enclosed a piece of ground of strong clayey soil, some years ago, inquired (through the means of the Gardener's Magazine, I think) whether he could have taken any other method than adding sand, ashes, light earth, vegetable mold, and other such like materials, sufficient to have made a garden upon a bare rock; but when, (he adds) the whole was incorporated, it still remained a garden of clay.

I was then unprepared to make any answer to such inquiries, but have since much regretted, I did not take up the subject at the time. To make a proper calculation of the expense will be attended with some little difficulty, as it will very much depend on the materials used to burn with. Some persons recommend coal; this however, I condemn, as being of too violent a nature.

When I first came to this place, although the garden had been formed twenty-five years, with most excellent judgment, it was, for the most part, a strong clay; and within nine inches of the surface, even the most common articles would not live upon it. No weather appeared to have a good effect upon it. At one time it was covered with water, and at another, rendered impenetrable by being too dry. After witnessing the effect on a similar clay, at the place before named, I commenced burning, and in a few days produced a composition three feet deep, equal, if not superior to any soil in this country.—The clay is rendered as pliable as burnt chalk, and seems to be possessed of the medium of holding just a sufficient quantity of moisture, and no more: as far as I have witnessed, every thing appears to thrive in it; and I have every reason to think, that when clay abounds in peach borders, &c. that very much may be done by way of improving them. As an instance, I last summer applied a quantity of burnt clay to some old peach trees, and on examining their roots in the autumn I found abundance of good young roots, growing in complete bunches; and I believe, that were these borders composed of three parts of this material, they would not be attacked with those diseases so prevalent in the spring, would be more likely to make their wood with shorter joints, and ripen much better and earlier than they could do in a compost, strongly manured.

My manner of performing the process, is as follows:—I throw out a trench eight feet wide, and about three feet deep; into this I place as much small wood, or faggots, as will fill the trench to the level of the ground, upon this I place a quantity of stronger wood, such as the roots of old trees, &c. which must be regulated according to the quantity of clay about to be burnt: when the whole is completed, I take the advantage of fine weather to light the fire; when this is done, the whole is covered up with that part of the clay which came last out of the trench, as of course it is the strongest; as the fire advances, more is thrown on the heap, making an embankment with the top soil, and all that part which contains any vegetable matter. As the fire increases, the clay contiguous to the fire is dug up, and thrown on the top, and should the weather prove dry, there will seldom require any addition of fuel. I have often been of opinion that I could add to the mass, until it reached to the height of a garden wall ten feet high.

As the violence of the heat subsides, I spread out the soil, which, from the carbonaceous principles it receives in the process, is rendered in point of richness, fully equal to soot. Indeed, I calculate that the ground so heated will require no manure, for at least four or five years, as every species of vegetable appears to grow much too strong for the first two years, with doing nothing more than giving a slight raking. The clay here, probably is superior to that in some other places, owing to the quantity of calcareous matter it naturally contains, I conceive a portion of it is converted into lime, in the process of burning.

Burning clay, entirely destroys every species of insect and pernicious weed, and on whole quarters, where the process was performed years ago, I have scarcely observed either sloop or snail.

I have no doubt, the business might be done with good success and very little expense, where furze and heath could be readily obtained; and as it would take more in proportion to the fineness of such materials, it would tend to enrich the mass to a very high degree. As the price of making up faggots almost amounts to their real value, we have taken the wood direct to the trench, without that process, which has answered very well.

I make it a rule, never to burn more clay on a given quarter, than the space requires to correct the soil, as it would be a waste of labor to remove it from place to place; and as it may be operated upon close to any tree or crop without danger, it is more desirable to perform the operation on the spot. The fire will sometimes require probing, to allow the air to enter; but I never wish to see much smoke escape, as I am certain it greatly contributes to enrich the earth. There will require no particular caution with regard to burning the clay too much; it will be seen, that as the wood consumes, the first course of clay will fall to the bottom of the trench, and this will perpetually take place until the whole of the wood is consumed by the fire, by which time, a body of hot clay will have fallen to the bottom: when, to secure success, I level down the heap, but take particular care not to break or pulverize the compost—the more this is avoided, the longer it will retain its fertilizing qualities.

Those who have new vine borders to make, could not do better than add to their compost one-third of burnt clay, as the average quantity of rain that falls in this island never properly suits the constitution of vines. I think it would prove an excellent corrector, and prevent those troublesome insects, the wire worms, from injuring the roots of the vine, and the cost, in most places, would be very trifling. I think, too, that it would be well calculated for any thing that requires mulching, for applying liquid manure does not in the least consolidate it. This is, I consider a great recommendation.

If you think these observations of any importance, you will oblige me by inserting them in an early number. And believe me to be, gentlemen, yours, &c.

GEORGE STAFFORD.

Willersly, July, 19, 1831.

RURAL ECONOMY.

(From Fessenden's N. E. Farmer's Almanac.)

FOOD FOR FATTENING CATTLE.

It has been often said, and we believe correctly, that it is not profitable, generally speaking, to fatten cattle on any kind of grain. Lawrence, on neat cattle, asserts, that "corn (by which is meant oats, barley, rye, peas, beans, wheat, &c.) cannot be used in the fattening of bullocks and sheep except in seasons of superabundant plenty." Even Indian corn is often too costly food to be used solely or chiefly for the profitable fattening of cattle; and grass, hay and roots are the materials, which true economy requires.* It is, however, asserted, that beef fattened on oil cake, raw potatoes, turnips, &c. will not be so firm, nor of so good a quality, other things being equal, as that which is fattened on Indian corn. If that be true, it might be well to commence feeding with turnips, potatoes, &c. and give the animals richer food as they increase in fatness. An able writer observes that, "with respect to feeding, the first rule is, little at a time and often; because experience has shown that animals that eat much in a short time do not fatten so well as those which eat less, but more slowly and frequently. The second rule is to begin the course with cabbage and turnips; then to employ carrots and potatoes, and lastly, Indian, oat, or barley meal, the March bean, or the gray pea. These aliments ought to be varied five or six times a day, and oftener if convenient; and instead of always reducing them to flour, there is an advantage in sometimes boiling them. A little salt, given daily, is very useful."

It would be advantageous to the community of farmers, if something like the following experiments were made and their results published. Let a number of cattle of similar or the same breed, age, propensity to fatten, as ascertained by hand, &c. &c. be fattened at the same time. Let one be fed entirely on potatoes raw, a second on the same root, steamed or boiled, a third be made one-half or two-thirds fat on potatoes, and his fattening completed with Indian corn; a fourth be fatted on Indian corn or corn meal; a fifth be fed with a mixture of all these kinds of food, given together in the same mess, or in different messes. The first food in the morning for the last mentioned bullock, might be a small quantity of potatoes, pumpkins, or turnips; the second, ruta baga or carrots, mangold wurtzel or parsnips. Then, as the last course of the day's feast, give Indian meal or other food, the richest you have. It would be well likewise to try the virtues of sweet apples. The most important object of such experiments, however, would be to ascertain whether the beef or cattle fattened on potatoes or other roots, raw, or boiled or steamed, is equal in quality to that which is fattened on Indian corn. If not, whether an ox may not be made nearly fat enough for profit on roots and hay, his fattening completed on corn, and the flesh be as good as if he had been fattened wholly on corn. And if an ox partly fattened on roots, and his fattening completed on corn gives as good beef as one wholly fed on corn, the question arises, *how long a time* will it require to give the beef its good qualities arising from the corn? We know, as respects swine, that farmers make them partly fat on any thing which they will devour, and then feed them for some time before they are killed with Indian corn or meal to "*harden the flesh*," as they express it. And perhaps the same process will answer as well for beef cattle. Some farmers say that the red or La Plata potato, given raw to swine, makes as good pork as that which is corn fed. Others say that any kind of potato, if steamed or boiled, will make as good pork as can be made of corn. If this be true of pork, it may be so of beef.

* See a communication for the New England Farmer, Vol. 1. p. 234.

It is a truth, which has been confirmed by repeated experiments, that food for swine, fermented and become a little acid, will go farther and fatten them faster than unfermented food of the same quantity.—But it is not, we believe, generally known in this country, that *acid food* is most valuable for neat cattle in certain circumstances. Mr. Bordley, (a celebrated American writer on rural economy,) however, asserts, that "oxen made half fat, or in good plight, on grass or turnips, are then soon finished in France upon a *sour* food, prepared as follows: *rye meal*, (buckwheat or Indian corn meal may be tried) with water, is made into a *paste*, which in a few days *ferments*, and becomes *sour*; this is then diluted with water and *thickened with hay* cut into chaff which the oxen sometimes refuse the first day, but when dry, they drink and prefer it. All the husbandmen are decidedly of opinion that they fatten much better because of the *acidity*. They give it thrice a day, and a large ox thus eats 22 lbs. a day. Maize [Indian] meal, or maize steeped till sour, should be tried. This sourness is given during the last three weeks of their fattening, and they eat about 7½ bushels of meal, value four dollars.

Care should be taken that the process of fermentation be not carried too far. The paste should not become moldy, nor the liquid food in the slightest degree putrid. We think, moreover, that there is reason in waiting till animals become "half fat," or in good plight, before they are fed with acid food.—Acids, like alcohol, create appetite by stimulating the stomach; but if long continued, they weaken the digestive powers, and in time totally destroy the tone of the stomach. The animal will then be visited with what in a human subject would be called dyspepsia, or a want of the power of digestion; fattening him will be out of the question, and he will be worth but little more than the value of his hide. The constitution of an ox may be destroyed by excessive eating; and it is only towards the close of his days, near the last stage of his preparation for the butcher, that he should be allowed to become an epicure, and indulged with as much as he can eat of rich and highly seasoned food.

Store keep should neither be too rich nor too abundant; and if an ox is once made fat, and then loses his flesh, he is like one of Pharaoh's lean kine: the more he devours the leaner he becomes. If young cattle are kept in rich pastures in summer, and poor fodder in winter.—sometimes stuffed, at other times starved.—they lose their disposition to fatten. To such cattle Mr. Lawrence alludes when he says: "It is extremely imprudent, indolently to continue at high keep, animals which do not thrive: I advert chiefly to individuals, with which the first loss is always the least." "Stock cattle," said Mr. Bordley, "are kept: others are fattened. The feeding is different. Cattle kept, need no kind of grain, nor even hay, unless to cows about calving time.—Straw, with any juicy food, (such as roots or *drank**) abundantly suffices for keeping cattle in heart through the winter, provided they are sheltered from cold rains. Mr. Bakewell kept his fine cattle on *straw* and *turnips* in winter." "A *drank* for keeping cattle may be made thus:—roots, chaff, or cut straw and salt, boiled together with a good quantity of water; the roots cut or mashed. The cattle drink the water, and eat the rest. Drank for fattening cattle thus:—roots, meal, flaxseed, chaff, or cut straw and salt, well boiled together in a plenty of water. If given warm, not hot, it is better." The same author says, "Hay, meal, and linseed jelly, with drank, must be excellent food in stall fattening. Linseed jelly is thus made:—seven quarts of water to one of flaxseed, steeped in a part of the water forty-eight hours; then add the remaining water, cold, and boil it gently two hours, stirring constantly to prevent burning.

* The word *drank* is given us by Count Rumford, for distinguishing this composition from common water.

It is cooled in tubs, and given mixed with any meal, bran, or cut chaff. Each bullock (large) has two quarts of *jelly* a day; equal to a little more than one quart of seed in four days."

(From the Genesee Farmer.)

PRESERVING GARDEN VEGETABLES.

If the common vegetables, grown in gardens, for family use during the winter, are worth the trouble of cultivating, they are surely worth the additional trouble of preserving after they are grown; yet how often do we see them neglected until they are either destroyed by cattle or hogs, or become frozen with the ground, which prevents their use during that part of the season when a fine supply of vegetables is most conducive to health.

Every farmer who values his reputation will endeavor to prevent the destruction of his vegetables by cattle; and those who pay proper attention to their own health and comfort will endeavor to secure their vegetables in such a condition as to render them most desirable for the table.

Although directions may be found, in almost every work on gardening, for securing vegetables for different seasons, yet we trust a few remarks on the subject will be found acceptable.

FOR PRESERVING CABBAGES.—Cabbages may be allowed to stand until the frost is sufficient to freeze the ground, without injury. They should then be pulled during a fine day, and hung up by the roots until all the water is drained from the head; after which, when there is plenty of cellar room, they should be set in the cellar, with their roots in good garden earth. Some prefer putting them in trenches in a dry part of the garden, setting them upright in the ground, and placing two boards in such a position as to form a ridge over the heads, which is to be covered with earth. Others recommend putting them in a trench with the heads downward, and covering them with straw, over which a little earth is thrown, leaving the roots above the earth. By this course the roots are destroyed so as to be unfit for setting in the spring. We have heard it recommended to cut the heads from the roots, leaving five or six inches of the stalk to each; the end of which is to be hollowed out, so as to be capable of holding about a gill of water. When thus prepared, they are to be hung up by strings tied around the stalks, with the heads downward, and the cavities in the stalks filled with water. If hung in a cellar free from frost, it is said that heads may be kept in this manner fresh most of the winter.

FOR PRESERVING POTATOES FOR THE TABLE.—Those who would have fine potatoes for their tables should recollect, that by exposure to the light potatoes may be rendered unfit for family use. When potatoes are dug they should be assorted, and those intended for the table put into bins or barrels and covered with sand. This will entirely exclude the light, and keep the potatoes as fresh as when first taken from the ground. Those who bury potatoes in the field should select ground which is free from surface water. It is thought that heaps of from thirty to fifty bushels keep better than when large quantities are put together. Let them be covered first with straw, after which a covering of four or five inches of earth will be sufficient. Earth that is fine and compact is found to keep potatoes better than loose sand. It is often the case in the spring, that potatoes are removed from the cellar or the field, where they have been kept through the winter, and placed on floors in out buildings, where they are spread and exposed to the light and air. This in a short time renders them unfit for the table. If they are removed to such situations, they should be kept in dark rooms or covered with dry sand, and the sprouts removed. By such management potatoes may be kept perfectly fresh until July, or the season when early potatoes are fit for market.

(From the Farmers' Register.)

SKIPPERS IN BACON.

MR. EDITOR:—There is a very general disposition in mankind, and in womankind too, to do things in any other way than the most direct. With many, a simple mode of accomplishing an object has no charms; something of mummery and mystification is absolutely necessary to recommend a scheme to their favorable notice.

We see often in newspapers, and every year in almanacs, sage receipts for blockading smoke houses against the inroads of those destructive little animals called skippers; and how much red pepper, trash tobacco, pennyroyal, &c. have been vainly wasted for this purpose in Virginia, nobody can calculate.

For the benefit of your readers, I give you my method of prevention. It has two recommendations—simplicity and efficiency.

Smoke the meat every day, until it is smoked enough; and on the very day that the smoking is discontinued, pack in hogsheads, barrels, or boxes: they need not be air tight, but it is necessary to have no holes or cracks in them large enough to admit the small fly, that is the mother of skippers. A lady to whom I communicated this plan in conversation, for the sake of convenience, used bags to keep her bacon in. Skippers were found in but one of them; and in that there was a hole.

This system has succeeded perfectly with me for several years. So far as I know, it was original; but I cannot suppose any thing so simple and so reasonable was never tried by others. D.

TO PREPARE COLD POTATOES.

Some of your readers may start, and ask, "Who don't know how to warm cold potatoes?" Why, a great many don't know how to do it as it should be done. In travelling, I have rarely met with potatoes prepared in the following manner, and I never found any that were half as good. Tastes differ I admit, but the experiment is easily made.

Slice them into a frying-pan; and over a quart of potatoes, pour half a tea-cup full of good cream (but no water), first sprinkling on a little salt. Cover it closely; and after it begins to boil, stir them a few times, till the pan is nearly dry, but not burnt. Then dish them. Y.

INDIAN CAKES, OR PONE.

For making Indian cakes.—To one quart of milk add three eggs—beat them well—then add as much meal as will make a batter of the same consistency as is used for buckwheat cakes, pour it into a bake-kettle, and bake as for other cakes. When sour milk can be had, it is to be preferred, into which put some pearl ash for making biscuits.

When cakes are made according to the above directions, most people prefer them to wheat bread, and no doubt they are more healthy. They should be eaten warm, and with a cup of coffee make an excellent breakfast. In addition to all other recommendations, they are—economical.

TO MAKE SALT BUTTER FRESH.

Put four pounds of salt butter into a churn with four quarts of new milk, and a small portion of annatto. Churn them together, and in about an hour take out the butter, and treat it exactly as fresh butter, by washing it in water and adding the customary quantity of salt. This is a singular experiment. The butter gains about three ounces in each pound, and is in every respect equal to fresh butter. It would be greatly improved by the addition of two or three ounces of fine sugar, in powder. A common earthen churn answers the same purpose as a wooden one, and may be purchased at any pot shop. —*Good-ell's Farmer.*

MISCELLANEOUS.

(From the Genesee Farmer.)

ON READING AGRICULTURAL PAPERS.

I apprehend that the passage referred to in the valediction of the late able editor of the *American Farmer*, has been misunderstood. "A DESIRE TO READ" political papers, amusing anecdotes, and fictitious adventures, is not uncommon; but this is not the kind of reading that was meant; neither is it such as a friend to Agriculture could recommend. The simple fact, that a majority of the subscribers to the *Genesee Farmer*, are not farmers, is enough to prove a lamentable want of true taste among many of the proprietors of the soil.

To have no "DESIRE TO READ" agricultural papers, is one thing; and to hold them in contempt, may be another. It is probable that G. B. Smith had both in view when he wrote. I know some farmers who sneer at the intimation that there is something yet for them to learn—and they are not far wrong;—for owing to their obstinacy, prejudice, and self-sufficiency, they are not in the way to learn. I never found one of this class among our BEST FARMERS.

The idea, though so plain, that no man can be too well informed of his own business, seems never to have entered their heads. Ask them to subscribe for the *Genesee Farmer*, and they reply, "La! we know more about farming already than we can practice."—These would fairly come in for a share of that inheritance.

Another class of farmers say on such occasions, "We take as many papers as we can possibly read or afford"—not an agricultural paper among them!—Their right to that bequest would also be undisputed.

He who feels sure that he knows enough, is not far advanced in knowledge; and hence it is that many of our old stock of farmers are left on the back ground by men who were never brought up to the business. In looking round the country, I find that some of our best farmers have been mechanics—from the currier's board, the lap stone, and the anvil; and similar cases have been observed in other countries,* and in other kinds of business. In England, it has been remarked of the manufacturers, that nearly all the improvements have been introduced by men from other employments. The old stock, like those who hold *book farming* in contempt, were content to know no more than their fathers.

I do not mean that an apprenticeship to farming is of no use, or that it does not give persons so educated, great advantages; but I mean if such persons think they have learned every thing within that period, worth knowing; or that it is useless to read or converse on agricultural subjects for the purpose of knowing more, they are greatly mistaken; and I am therefore of opinion that the late Editor of the *American Farmer* gave wise counsel to our farmers when he said, "*Read agricultural papers that you may obtain agricultural knowledge.*"

CHEAP ANTIDOTE.—There is not a house in the country that does not contain a remedy for poisoning, if instantly administered. It is nothing more than two tea-spoonfuls of made mustard, mixed in warm water. Its acts as an instantaneous emetic. Making this simple antidote known, may be the means of saving many a fellow creature from an untimely death.—*New England Farmer.*

FOUR GUINEAS PER QUART FOR GREEN PEAS.—At Covent Garden market this morning, some green peas were exhibited, for which four guineas per quart (shelled) was asked; also some raspberries, at 2s. 6d. per ounce.—*London Courier*, 24th April.

*Gen. Far. vol. iii. p. 296, col. 2, near the bottom.

Prices Current in New York, November 9.

Beeswax, yellow, 18 a 20. Cotton, New Orleans, 14½ a 18; Upland, 13 a 16; Alabama, 13 a 18. Cotton Bagging, Hemp, yd. 20 a 22; Flax, 18 a 19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, — a —; rough, 13.50 a —. Flour, N. York, bbl. 5.62 a 5.65; Canal, 5.60 a 5.88; Balt. Howard St. 6.25 a 6.50; Rhd city mills, 6.75 a 7.00; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. 1.16 a —; Rye, North, .80 a —; Corn, Vt. North, .78 a .79. Barley, .72 a —; Oats, South and North, .35 a .40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Provisions, Beef, mess, 5.50 a 9.00; prime, — a —; cargo, 5.50 a 5.75; Pork, mess, bbl. 16.75 a 17.00 prime, 11.75 a 12.00; Lard, 10½ a 11.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own, yet forward enough to sell from, but we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

NEW CHINESE MULBERRY.

(*Morus Multicaulis*.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK,

American Farmer Establishment.

DEVON BULL.

The thorough bred bull Othello, 4 years old last spring, if immediately applied for, will be sold for \$100. Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

YOUNG HECTOR.

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

GRASS SEEDS.

Perennial rye grass, at \$1 a bushel.

Poa pratensis (fuztop) for lawns, at 25 cts a quart.

Tall Meadow Oat Grass at \$2.50 a bushel.

Orchard Grass at \$3.00 do

For sale at this Establishment, by

I. I. HITCHCOCK,

American Farmer Establishment.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK,

American Farmer Establishment.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK,

American Farmer Establishment.

DEVON CATTLE—CHEAP.

A well known breeder of Devon stock in Maryland, being about to change his farming arrangements, is willing to sell out his entire stock together or separately at a great bargain. It consists of a bull, three or four cows and three heifers, two years old. All the cows but one, and all the heifers are supposed to be with calf by the bull above mentioned. Apply to

I. I. HITCHCOCK,

Aug. 50.

Amer. Farmer Establishment.

MILK WHITE TURKIES.

A few pair of these beautiful fowls, are for sale at this Establishment, at \$5 a pair.

They are equal in every respect to any other known breed, and for beauty far superior.

I. I. HITCHCOCK,

American Farmer Establishment.

DEVON AND SHORTHORN CATTLE,

and other Superior Stock, for sale.

To be sold, at the Three Tuns tavern, on Saturday, the 16th day of November, at 12 o'clock, a variety of Cattle, of the Devon and Shorthorn breeds of pure blood, and superior in quality, consisting of

- 1 Devon bull, 4 years old.
- 4 do 2½ years old.
- 2 bulls, half Devon and half Shorthorn, one 2½ years old, the other 1½ year.
- 3 Devon heifers, 18 months old.
- 3 Devon bulls, 15 to 18 months old.
- 4 Devon heifers, with bull calves, from a Shorthorn bull.
- 4 bull calves, half Devon, half Shorthorn.

The famous bull Tecumseh, is the sire of all the above Shorthorn offspring.

- 6 Devon cows, in calf by a Devon bull.
- 6 rams, of the Bakewell and Southdown blood—the Bakewells are of the stock of Mr. Barney.

- 1 colt, of very fine promise, 2 years old in June, upwards of sixteen hands high—from Mr. Willis' horse.
- 2 colts of the Tom breed, one 16 months old, the other, 2 years four months.

A Jack of the blood of the Knight of Malta, and the Royal Gift—about 13 hands high, and of very great bone; a fine foal getter.

A Mule, the colt of the above Jack, 14 months old.

The above stock has been raised on the estate of Brooklandwood, the residence of R. Caton. Apply to

EVAN HUGHES, Manager, or

H. W. BOOL, Auctioneer.

Balt. Oct. 18.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seeds, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

FRUIT TREES.

The subscriber has the sole agency in this city for disposing of FRUIT TREES, from the Nursery of Mr. Samuel Reeves, of New Jersey, which establishment has gained a high reputation for the quality of its trees and their fruit, a specimen of which can now be seen at my store. He will also receive orders for fruit trees, to be furnished by Mr. Saml. Gray, whose trees are already well known in this vicinity, orders for this season should be forwarded immediately.

J. S. EASTMAN.

N. B. In store SEED RYE, of prime quality, and also red chaff and red bearded WHEAT. J. S. E. Oct. 25.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do ground leaf, 5.00 a 9.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 19.00 a 25.00.—Virginia, 4.00 a —. Rappahannock, 3.00 a 4.00.—Kentucky, 3.50 a 8.00. The inspections of the week comprise 191 hhd. Maryland; 38 hhd. Ohio—total 229 hhd.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d quality, 6.25 a 6.75; super Howard street, 5.62½ a 5.75; (wagon price, 5.50, a —) city mills, 5.62½ a 5.75; city mills, extra, 6.12½ a —. CORN MEAL, per 100 lbs. 1.50 a 1.56.—GRAIN, red wheat, 1.15 a 1.17; white do 1.20 a 1.25.—Corn, yellow, 63 a 65; white, 62 a 63; in the ear, 2.50 a — per bbl.; RYE, 70 a —; chop rye, per 100 lbs. 1.56 a —. OATS, 33 a 35.—BEANS, 1.00 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 95 a —.—CLOVERSEED, 5.00 a 6.00.—TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —. Lucerne 37½ a — lb.—BARLEY, 75 a —.—FLAXSEED, 1.37 a 1.50.—COTTON, Va. 14 a 15; Lou. 16 a 18; Alab. 14 a 16; Tenn. 14 a 15; Upland 15 a 16.—WHISKY, hhd. 1st p. 28 a —; in bbls. 29 a 30.—WOOL, Washed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—UNWASHED, Prime or Saxony Fleeced, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—FEATHERS, — a 40.—Plaster Paris, per ton, 3.75 a 4.00; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 4.75 a 5.50.—Oak wood, 3.25 a 3.75; Hickory, 4.75 a 5.00; Pine, 2.50.

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GENERAL

Agricultural and Horticultural Establishment:

COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

AN extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS for the FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets

THE FARMER.

BALTIMORE, FRIDAY, NOV. 22, 1833.

GREAT CORN RACE FOR ONE THOUSAND DOLLARS, over the Talbot and Dorchester course, in 1834.

This is the sort of sport we like—it is really to our taste. In such contests some ONE may win the prize, but we are confident that, unlike betters on horse races, the losers will all be gainers in the long run. Speed and bottom, say we, to all the competitors, and may they be rewarded for their singular choice in amusements, as was Midas, of old, for his preference in the musical contests of a brace of windy gods—may they each acquire not merely a pair, but a multitude of long ears. By the way, we hope as the Cambridge Chronicle suggests, that it shall be made a condition of the race, that each competitor furnish a statement of his method of cultivation, variety of seed used, &c. &c., for the benefit of the public.

One Thousand Dollars!—Agricultural Sweepstake, for Talbot and Dorchester Counties.

A sweepstake proposed to the Agriculturists of Talbot and Dorchester counties, on one continuous acre, "a parallelogram," of "Indian corn," shelled, to be grown the ensuing season.

Measurement of land, and corn shelled, to be attested on oath. Twenty dollars entrance money to be paid by each competitor, on or before the first day of March, into the hands of one of the editors of the Easton or Cambridge newspapers, of which due notice shall be given, on or before said day, to Martin Goldsborough, of Talbot, or Joseph E. Muse, of Dorchester.

The stake entered shall not be withdrawn unless six shall not have entered, by the said first day of March; in which case, all shall be void—nor shall the number exceed fifty.

A REQUEST.—If any of our readers can furnish us with a small quantity of the *Skinless* or *Chinese Oats* for seed, it will be an important favor. We wish to try them, and know not where to obtain seed.

A friend in Virginia writes us the following, under recent date: "In the spring of 1832, I purchased from our departed friend, R. K. Meade, a pair of his fine Frederick sheep. The ewe brought me a fine ewe lamb on the 13th of December following; and on the 13th of July, just seven months afterwards, she brought a ram lamb."

GAMA GRASS.—We applied some weeks ago to R. B. Mason, Esq., of the District of Columbia, for seed and roots of the Gama Grass. He sent us a small quantity of each—for which we tender him our thanks—which we have planted, and of which we hope to give a good account hereafter. In his reply to our application he bears the following testimony to the apparent excellence of this species of grass:

"I have thought that I would not add more than what has been said on the great advantages of this grass, until I have made fully such experiments as would warrant me to place it fairly before the public. I am now engaged with those experiments. I mowed on Saturday my little nurseries, which gave me about one ton and a half of good hay. The stubble grew from 10 o'clock on Saturday until 8 o'clock the following morning full one inch. This rapid growth induces me to hope for at least two other cuttings. I find the seed very difficult to gather; they drop off as fast as ripe, one by one. However, I have succeeded in saving a small quantity of good seed.

"You ask if this grass cannot be propagated by transplantation? I answer, that I have no doubt but

this is the best and true mode to arrange a meadow. As to the valuable properties, as have been described, for fodder, &c., I have no question of their correctness; and as to its value to bind banks on the canals, &c., I have full proof on my own farm. As to the different soils it most delights in, has been correctly stated in the National Intelligencer of the 7th and 9th inst.

"I have before me grass, the seed of which was planted in May, now about 10 inches high. I am fully convinced that the roots put out this fall will give me a good cutting in June following. When I have advanced far enough in my experiments, to warrant my placing this extraordinary grass before the public, which to me seems the best and most valuable grass that I have ever seen, I shall then take great pleasure in communicating the results to you. My experiments will be on a scale fully satisfactory to fairly test it for agricultural purposes. In haste,

"I am, dear sir, very respectfully,

"Your obed't serv't,

"RICHARD B. MASON."

Mr. HITCHCOCK:

"The fly season is past, but it is good policy 'in time of peace to prepare for war.'" The following advice as to a means for protecting horses and other animals from the very troublesome attacks of flies, I have cut out of the "Yazoo," a paper printed in Mississippi. Whether it is original in that paper, I know not; but I do know that the prescription is a perfect preventive of the evil. It is tanners' oil that ought to be used. Tell all your subscribers to TRY IT.

Farmers might easily save the flesh of horses and cows, and confer a great kindness on their animals, in preventing the usual annoyance of flies, by simply oiling the parts most exposed. Flies will not alight a moment on the spot over which an oiled sponge has been pressed. Probably either fish or flaxseed oil would answer, but what I have known used with success was the tanners' oil. Every man who is compassionate to his beast ought to use this simple remedy; and every livery stable, and country inn, ought to have a supply at hand for the use of travellers.

PLANTER.

Extract of a letter to the Editor, dated

Port Gibson, Miss. Oct. 29, 1833.

"The prospects of the planters in this country are now very good. The price of cotton is near a hundred per cent. more than it has been for several years past, and the crops are excellent. On many of the river plantations they have made much more than they can gather with the same hands. In the eastern part of the state, the crops are not quite so good. In some neighborhoods, they have suffered from drought, and in others very much from sickness—not so much from cholera as from fevers; the latter having prevailed to a very great extent in almost every part of our country. The cholera did not prevail to any very great extent in this neighborhood. The crop, I should think, will not be diminished much by that cause.

"We had a severe frost about a week since, which has produced considerable injury on some plantations, but it will not make any perceivable difference in the quantity that will go to market. P. H."

COTTON SEED OIL.—We extract the following from the "Southern Banner," it being part of a letter from Launcelot Johnston, Esq., concerning a machine he has invented for the hulling of cotton seed preparatory to the expression from it of the oil. After describing his machine, Mr. J. proceeds thus:

Should any individual be sceptical as to the excellence of the cotton seed oil, I have no hesitation in saying that their doubts will be removed by visiting my residence; as my dwelling house has recently been painted with that oil, and I think it the best painted house in Georgia.

It has been the opinion of some that it will not answer for white paint; in this, however, they are much mistaken. It certainly makes a whiter and a better coat with white lead, than linseed oil; it is longer drying, consequently, the coloring principle which is in all vegetable oils, has longer time to evaporate. It requires no preparation for external painting, only a short time to settle. To prepare it well for inside painting, it will probably have to undergo the usual process for making drying oil, which is understood by all good painters. It only requires a little boiling or filtering through pulverized charcoal, and paper, to make it an excellent lamp oil. It is well known that paint is more durable at the North than it is in the South, which I consider is owing to the circumstance of the linseed oil drying too soon in our climate; if so, I consider the cotton seed oil peculiarly and providentially adapted to our climate.

As yet, I have only expressed this oil for my own use, with a wooden screw, of the description which is used for packing cotton. This screw will answer well for making oil for domestic or plantation use. The kernel must be beat or ground, and made hot as it is pressed.

I recently visited the North for the purpose of ascertaining the best mode of expressing oil, but before my object was accomplished, I received accounts from home of the extreme illness of one of my family, which cut short my researches. I ascertained, however, to my satisfaction, from gentlemen engaged in oil making, the old Dutch wedge press is the best, particularly for the South, it being both simple and efficient.

Whilst in Philadelphia, I consulted the Messrs. Freemans of that city, on the subject of cotton seed oil, they being practically acquainted with the process of expressing and refining the various kinds of vegetable oils. They had received seed from New Orleans, from which they had extracted the oil without hulling. I saw the article after it was clarified, and pronounce it the finest and most limpid oil I have ever seen. They are of opinion it will not only become an article of food, but when properly refined will be esteemed a luxury. They are only prevented (they state) from going into this business from the high price which they would have to pay for the seed; as it would cost in Philadelphia, including the freight, 75 cents per bushel.

A planter who makes 100 bales of cotton, will have about 3000 bushels of the rough seed—this when hulled will make him 1000 bushels of (in my opinion) the most valuable grain raised at the South. The cake, after the oil is expressed, is much more valuable than the seed in the usual way fed to stock. It only requires a short time for hogs and cattle to become fond of it. The kernel before expressed, contains more oil than the stomach of the animal can digest. Hence it is, that cotton seed is not so good for hogs, &c. as other grain, but deprive it of a large proportion of its oil, and I believe there is no grain preferable for them.

In answer to the numerous applications by letters which I have received from New York and New Orleans, on this subject, I refer them to this communication. I return my thanks to those gentlemen who have so kindly offered to patronize my invention, by purchasing rights and machines. I take this occasion to state to persons at a distance, that I do not make, as I do not understand the mechanical part of making these machines. I shall feel amply compensated for all which I have done in this important business, by seeing patriotic and enterprising individuals successfully engaged in this enterprise, so valuable to the South.

I have engaged a competent workman to make me a press, and in a short time I hope to have it in operation; in the mean time, it will afford me pleasure to impart any information in my power on this subject.

LAUNCELOT JOHNSTON.

Madison, Morgan Co. Geo. Oct. 5, 1833.

AGRICULTURE.

(From the Farmers' Register.)

ON THE PROPAGATION AND HABITS OF THE MOTH-WEEVIL, AND MEANS SUGGESTED TO PREVENT ITS RAVAGES.

There is no insect which has been more injurious to the farmers of Virginia, below the mountains, than the *Moth-Weevil*, and there is none, under the depredations of which we suffer, whose origin and habits, we are less acquainted with. Fortunately, some means, more or less effectual, have been found to restrain the ravages of weevil—or otherwise, a large proportion of the grain of every crop of corn and wheat, would be devoured by the maggot's of these insects, and the remainder deteriorated by being ground into meal with this animal admixture. If wheat is left long in the straw before thrashing, or ears of corn placed under circumstances equally favorable to the operations of weevil, the inside of nine tenths of the grains of both will serve as a nest, and for food for their young. But without knowing, or inquiring into the cause, it has long been known that if wheat is thrashed and made into flour, as early as (without regard to weevil,) economy would direct, the loss from this cause is completely avoided. By compelling us, under so heavy a penalty, to thrash and deliver our wheat to the miller early, it is doubtful whether the weevil has not rather been serviceable than injurious to the wheat crops of those who will profit by so forcible a lesson. Still, immense quantities of wheat are lost almost every year, merely from delay in getting out the grain: and in most years, all corn kept in the usual manner until after midsummer, suffers considerably from the ravages of weevil.

The moth-weevil must be far more numerous now than formerly. From what I have heard of the former late treading out of wheat in Eastern Virginia, when there were no thrashing machines—and the tobacco culture, then general, caused still more delay in getting the wheat to market—it seems certain that this insect could not then have been so plenty as in later times. Still they were so injurious as to be considered a serious obstacle to the extension of wheat culture, the remedies being then less understood than since. We learn from one of Mr. Jefferson's letters from France, that the fear of introducing this formidable enemy into Europe, where it was supposed to be unknown, was a strong objection to the importation of wheat from this country. This fear was without foundation. The ravages, and the existence of weevil, seem to depend on the nature of the climate, and very slight variations are enough to alter the strongly marked limits of its habitable region. I have heard that none were known west of the Blue Ridge until of late years: but since, they have passed that barrier, and are slowly ascending the country, following the course of the valley of James river. They were not known formerly in the state of Delaware. I infer this from the indirect but conclusive evidence contained in an article from Delaware, published in the Philadelphia Agricultural Memoirs, which recommends as a good practice the treading wheat from the straw on the ground when frozen. If such delay was permitted in any country infested with moth-weevil, there would be generally found in the grain less flour than bran. These insects have not been known for many years together in some parts of Maryland, though very plenty both before and after such long exemption. It is stated in a letter published in the American Farmer (in 1826,) that weevil had reappeared on the Eastern Shore of Maryland after an absence of perhaps forty years, and were very destructive to the wheat crops—the more so, no doubt, because no precautions had been used to guard against depredations which were so unusual and unexpected. On the whole, the territorial limits within which these insects live, seem to be extending, owing to the increased average temperature produced by clear-

ing and cultivating the country: but these limits are sometimes contracted greatly, and for years together, by spells of severe cold weather.

In northern papers (this summer) statements have been published of great injuries caused to the wheat crops by insects which are called weevil, and which, by the description, seem to act on the grain very much in the same manner. This visitation was severely felt on the crops in the valley of the Hudson, and still farther north. But notwithstanding the name, and the similarity of operation in some respects, these cannot be the same with our moth-weevil, as the damage by the former appears to have been produced while the crop was standing—or, at any rate, much earlier than the moth-weevil is in action on wheat. The same name being applied to different things, and different names to the same thing, have served to throw additional obscurity over this, as well as many other subjects belonging to agriculture.

The weevil known in more northern countries, we have also in plenty in Virginia, and know it by the name of *black weevil*. This is a very small black beetle, which has wings under the hard cases which protect them, though I have never known them to be used for flying. These insects live through the winter, if their food and shelter remain, and increase from year to year, in any house where they have gained admittance, and where grain always remains; and they can be kept away by care in clearing out the barn, and other precautions, which are totally inoperative in guarding against moth-weevil. Much confusion has grown out of using the same name for these very different insects. The excellent essay on weevil by Caleb Kirk, of Delaware, applies altogether to the black weevil. My observations are intended to be confined to that which I distinguish by the name of the moth-weevil.

Though I have spoken of the moth-weevil as unknown in Europe, in obedience to what are deemed the best authorities, still there is reason to doubt the correctness of that opinion. The following description, which seems to suit that insect, is contained in a letter from a gentleman of Angoumois (in France) to M. Duhamel, and is presented in a report of the Committee of Husbandry of the American Philosophical Society. "The great loss we have suffered in our corn, and especially in our wheat, for 17 or 18 years, has put us on making strict inquiry into the causes of a corruption with which our grain is infected. The common opinion is, that when the corn is in bloom, that is to say in the month of June, small white butterflies lay their eggs in the flowers. When the grain is ripe, the eggs are enclosed in it, and as soon as the corn is laid up to be kept, it is found to ferment. This fermentation raises an heat, which hatches the eggs, where little worms proceed, which are transformed into *chrysalids*, and these are afterwards metamorphosed into grey butterflies or moths." In this description we may trace throughout the apparent or real progress of our moth-weevil.

The insect under consideration is a moth, of a dirty pale yellow color, about the third of an inch in length. Their flight is awkward and feeble, and their bodies so soft and tender as to be liable to injury or destruction from slight causes. They leave their places of concealment in wheat stacks, &c. near sunset, and their flight and numbers are always well marked by the concourse of bats and night-hawks, which are engaged in devouring them. Night-hawks are seldom seen, and never in great numbers, at other times. It may be well doubted whether any of the weevil escape these enemies, and return to the stack or barn from which they flew. These moths proceed from maggots which are in the grains of corn or of wheat, and their origin, or manner of propagation is the great difficulty, and will be the principal subject of these observations.

Weevil may be produced in myriads wherever corn or wheat is placed in the condition most favorable to their increase, but they are seldom, if ever, met with

elsewhere: and yet they are not likely to escape observation, wherever they might exist. The strangeness of their being thus apparently called into existence merely by grain being made fit for their birth and support, has caused several opinions to prevail with regard to their origin and propagation, which are as much opposed to each other, as to reason and probability. Still, it seemed that we could only choose, as the most probable explanation, that which seemed the least incredible. I will proceed to state the most prominent of these several opinions, and the facts on which they rest—and these facts, I believe, are unquestionable, however different, or however false, may have been the inferences drawn from them.

The first opinion is, that the eggs of the weevil are all laid on our corn and wheat, after the crops are secured in houses and stacks: and this rests on the following facts.

These insects begin to show plentifully, both in the maggot and winged state, in our wheat and corn in August, and not one is ever seen much earlier than that time. They continue to come out of the grains as long as the weather remains warm, if the grain continues in the state favorable to them. That the eggs could not have been deposited before the crops were brought from the fields, is sustained by the fact that not a weevil can be seen there, whereas millions would be necessary to deposit so many eggs, as will afterwards hatch, during the short time that the grain of wheat, or of corn, is green and soft.

The second opinion is, that the eggs of the weevil, like those of the pea-bug and the chinquepin bug, are deposited in the grain when in a soft state in the field. This opinion has already been stated in the extract quoted above from a French author: and the following shows a similar opinion as received and prevailing in this country. "A correspondent of the Cambridge Chronicle, who appears to have given much attention to the study of this destructive insect, has written a very sensible essay upon the subject in that paper, from which the following facts are abstracted: 1st. That when the grain is in an unripe, soft and milky state, and then alone, the parent fly perforates its upper or smaller end, and therein deposits the egg: and 2d. That to destroy the enemy, to kill the vivifying principle of the egg, the grain thus impregnated must be secured from that temperature, necessary to procreation, which nature uncheated, would be sure to provide, &c." This manner of depositing the egg in the soft grain agrees with nature's operations in propagating other insects, (as we know of the pea-bug,) and seems the only mode possible for so very feeble an insect as the moth-weevil, which scarcely could bore into the ripe and hard grain, and which could not possibly penetrate into a stack of wheat, or even into a bush of the cleaned grain: and yet so large a portion of the grains in both cases will sometimes be found either tunned, or hollowed out, by maggots, as to induce the belief that every grain must have contained an egg. The strange fact that the weevil is seldom, if ever seen on corn or wheat in the field, may possibly be caused by the weevil flying more by night than by day, and by one insect being capable (like the queen bee) of laying many thousand eggs. Besides, it is certain that weevil eggs are laid in growing corn, as in the upper grains of some very forward ears. A few weevil holes may be seen when they are gathered in autumn—showing that the continued warm weather had hatched and sent forth the weevil, which in later ears would have continued dormant until the next summer. Other facts, which many know, and all may easily try, seem to prove that weevil eggs are laid in the field, and that almost every grain is used for that purpose. If twenty or thirty heads of wheat, or a few ears of corn, are taken from the field immediately to a dwelling house, and locked up in close drawers, where no weevil can possibly enter, a very large proportion of the grains of wheat will be weevil eaten before October, and still more of the corn during the next summer. That

these eggs could have been laid in the field is admitted to be strange and inexplicable—but that they could have been laid afterwards, (according to the first opinion,) is absolutely impossible.

A third opinion, (which has fewer, but equally determined advocates, and they mostly practical and observant farmers,) draws its support from the incredibility of either of the others. This is, that the weevil is a vegetable product, and propagated without the usual intercourse of the sexes, and without animal parentage. I will quote (from the American Farmer, vol. 13.) the reasons for this opinion, contained in a letter written by Mr. Wm. R. Smith, senr. of Scotland Neck, N. C. a farmer of such habits of observation as to give much countenance to any opinion he may support, even when as unphilosophical as this is.

"I have seen in the Farmer a number of communications about the weevil, as I differ with them all, I have often thought of giving you my opinion on its origin; but being advanced in years, and not much in the habit of writing, only when compelled by business, I have put it off, promising myself at some future day to make the communication; fearing I may still neglect it, I will give you one reason why I differ with all the writers that I have seen on this subject. They all say that the egg is deposited by some insect in each grain while in a soft state. If this is true, I should like to know how the insect makes its way through the husks or shuck of corn when it is five or six double, in such manner as to lay them in each grain? I think all will agree with me, that it is impossible; then how does the egg get in each grain? It must be the natural production of the grain, or some insect deposits something on the bloom or tassel, and it is scattered through the pollen to each grain, for each grain has its silk. Get any of your friends to gather an ear of corn this fall, with all its husk on; put it in some place where no insect can get to it until next spring; then take the husk off and suspend it with any covering that will let air, moisture and heat get to it; I will warrant the weevil will come out. These hints, if attended to by some of your numerous and well informed readers, will enable some of them to do more justice to the subject than I can myself."

My own opinions for a long time agreed with that which was stated the second in order. I owe my change and my present views to a letter from Kentucky, which is published in the American Farmer, p. 74, signed T. S. and is one of those alluded to above by Mr. Smith, as altogether unsatisfactory. I confess that at first I attached but little importance to its statements; and it furnishes one of the many instances which I have known, that a preconceived false opinion will cause us often to read without believing, and almost without notice, other opinions from which we might gather correction and truth. In this case, however, I was induced to make some experiments which will be presently reported, and which, I think, leave no doubt that all the foregoing opinions are wrong, and that the last referred to is, in the main, correct, viz: That there is a *continued re-production of the weevil, in short spaces of time throughout the warm season*. But the observations of the writer, however ingenious and correct, were not made with the accuracy which experiments require, and were liable, in particular, to one important objection. The parcel of grain on which the observations were made, and on which he so nearly traced, by the eye, the continued re-production of weevil, had not been excluded from the access of the insects from without; and therefore, there was no positive proof that the eggs, late as was their hatching, might not have been laid in the field—or that as many insects might have been produced (according to another opinion) without eggs. I admit that what T. S. saw (through a magnifying glass) of eggs, and young maggots, was strongly in favor of his views, and in opposition to the others; but observations so made are extremely delusive, and could not be relied on, unless the progress of a single insect had been observed sepa-

ately, and traced from the depositing of the egg, to the maggot being sufficiently grown to establish its being the weevil. Several other kinds of insects are found on bulks of cleaned wheat, and a mistake might easily have been made of one for another. But it seemed possible to institute such experiments as would supply this defect, and establish beyond doubt the truth or falsehood not only of this, but of any other of the opinions mentioned above. With this view, the following experiments were planned and executed. The results prove the correctness of the supposition of the continued re-production of weevil, and this, taken in connection with the fact that some few weevil eggs are certainly deposited on corn while yet in the field, (and possibly also on wheat,) will explain satisfactorily the means for the supply, and of the astonishing increase of weevil in our cribs of corn, and stacks of wheat. The whole cause of difficulty respecting the origin and propagation of weevil has been owing to every person supposing the eggs to have been deposited in some one manner, or at some one period—either altogether in the green state, or altogether in the dry—or not at all. The obstinacy with which we all have maintained some one of these different views has kept us blind to the true origin and manner of re-production—which opinion when once examined and admitted, will perhaps seem so clear and undeniable, that the simple announcement of the facts would be enough to insure their acceptance. But the extracts which I have quoted, and every opinion which may have been heretofore expressed on this subject by writers and practical farmers, will acquit me of using uncalled for trouble, or adding superfluous proof, for the purpose of opposing prevailing errors.

The experiments were made as follows.

June 24th, 1833. The corn in my crib, which had been shucked last autumn soon after it was hard, was examined closely, without finding a weevil, or any holes in the grain showing that any had already escaped. Took four ears of white-flint or rare-ripe corn (which is much the most subject to be weevil-eaten,) for my experiment. These were examined well through a magnifying lens, without discovering any egg attached to the outside of the grain.

EXPERIMENT I.

One of these ears (A) was placed in a large drawer, which was kept locked, and in which some ears of the common large soft corn, and some of *pop* corn (the smallest and hardest, as well as the earliest kind,) had been kept since March. The *pop* corn already (June 24th,) had weevil maggots visible—the large corn none. This drawer (by possibility,) might have been entered by weevil, as I found afterwards that some of those which hatched got out through a very narrow crack; but it is not likely that any from without entered either the drawer or the house.

This drawer was kept locked, and was seldom opened. It contained loose papers, which furnished shelter and hiding places to the weevil, so that when the drawer was opened to examine the corn, but few of them attempted to escape. Plenty of air had admittance into this drawer, and some glimmering of light.

On Sept. 2d, this ear (A) appeared (but without counting them) to have weevil holes visible on from one-third to one-half of all its grains—and the large soft corn in the same drawer had suffered no less.

The first 10 or 12 days of September were uncommonly warm, after which followed several very cold nights, and fires were required. On the 16th, another examination was made. Nearly all the winged insects were then dead. The damage had so much increased in the preceding 15 days, that out of 492 grains, which the ear (A) had, all except 3 contained either the maggots of weevil, or had holes from which the perfect insects had escaped. Many grains had 2 holes, and one was observed with 3. All the grains of the ears of large corn seemed to be as completely riddled, though only one row, taken at random

as a sample, was counted: and in that every grain was eaten, and some contained two maggots. There is no question, but that there had been produced in this drawer more weevil than there were grains of wheat.

EXPERIMENT II.

The other three rare-ripe ears were placed (June 24th) in a small and very close drawer within my desk, into which no weevil could possibly have penetrated, and from which light was entirely, and fresh air nearly excluded, except at the short spaces of time when it was opened for examination. These ears were looked at every two or three days: and between the 4th and 10th of July, 3 grains on one of them (B) were observed to have maggots. These had not yet opened their way through the skin of the grain, though its transparency rendered the holes below, as visible as if the weevil had already taken flight. These grains were nearer to the bottom than the top of the ear. The three maggots were killed as soon as discovered, by thrusting a pin into their cells; and the ear containing them, (B) and one of the other two, (C) without any mark of weevil, were removed to another similar and close drawer, in the same desk, and completely secured from the access of weevil without. These were frequently examined until Sept. 16th, and no weevil hole was formed in either, after the destruction of the three maggots in one of the ears.

EXPERIMENT III.

The fourth ear (D) was left in the first small drawer, and with it was put (a few days after, or about the 15th of July,) an ear of *pop* corn, containing inclosed maggots, the cells of which were visible—and also a few of the winged insects. This ear was sometimes examined through the magnifying glass, but no eggs, or small maggots, were observed on the outside of the grain, (as was seen by T. S.) until the 1st of September, when two slender white worms, with yellowish heads, were seen crawling on the corn. They quickly escaped from observation by borying themselves between the grains—and to that baste to escape from light, when taken from the perfectly dark drawer, may be attributed my general ill success in observing the worms before they penetrated the grain. They were so small as to be hardly perceptible to the naked eye, when in motion, and not until they had been first discovered through the glass. At no time could I distinguish eggs—though there was plenty of matter of some kind ejected by the weevil, whenever they were on the wing, and this might have contained eggs, and exhibited them to nicer observation and a more powerful magnifier than mine.

By the 2d of September, the weevil were numerous on this ear, but much less so than on those in the large drawer. On the 16th of September, the grains having perforations visible on the exposed parts (as they stood on the ear) were counted, and found to be 270 out of 484, the whole number then on the cob. As no grains were cut open, nor even shelled off, to aid this examination, many or all of the grains which were counted as free, might have contained young weevil. The maggot is not visible to superficial observation, until it is almost or quite grown: and many weevil eat out of the grain below, where they cannot escape, and die there without being seen. At this time, (as in the other drawer,) nearly all the winged insects were killed by cold, and the very few remaining alive seemed to be dying—and their propagation and increase, for that season, were supposed to be ended, and the experiment closed. For this reason, the ear was thrown aside. This is to be regretted—for a very warm spell soon came on, which brought out plenty of weevil elsewhere, and would probably have shown almost every grain of this ear to be tenanted, as well as those used in the first experiment. This however is only conjecture.

It should have been stated, that the winged insects attempted to escape from this drawer, whenever it

was opened, and that for this reason, the number of breeders was diminished.

EXPERIMENT IV.

On Sept. 2d, I gathered from my field an ear of the common large corn, of which the grains were firm and ripe, but far from being dry or shrunken. The ear was so closely covered by its shuck, that no weevil could possibly have penetrated beneath, for the purpose of depositing its eggs on the grain. From the lower half of the ear, 19 grains were taken off by digging them out of the cob, with a knife—they were so soft at the heart that they could not have been shelled off without being broken at bottom. These grains were immediately put into the drawer with the ear (D) used for experiment 3.

On the 16th of September, a weevil maggot nearly half grown, was found exposed to the eye, in the grain of one of these grains, in a small wound made by the knife. This was destroyed in the examination. In two other grains, worms were seen (by using the glass) just beneath the thin transparent skin of the grain, which they had apparently burrowed along under, like a mole under the surface of the earth. This would not have been apparent to any but very close observation. The vibratory motion of the yellow heads of the worms, caused their presence to be sufficiently evident, though when still, the speck was scarcely perceptible. That the proof might be furnished, that these were weevil, and of course from eggs recently laid, the grains were placed in paper, and carried in my pocket, that they might not want enough warmth to continue to live and grow. A few other maggots soon became visible in other grains; and by the 29th, they had shown in 12 of the grains, and in several of them by the cells appearing, merely covered by the skin of the grain, but proving that the insect was nearly ready to come out in a perfect state. On the 6th of October, the last examination was made. At that time, one of the winged insects had left its cell, and was found dead within the paper covering. This was enough to establish the fact that the weevil egg had been laid and hatched, and that the insect had passed through every change of form, to the perfect winged state, within the time between the 2d of September and 6th of October. On all the grains, except three, the cells were now visible, externally; and these three, when cut open, were found to be equally well supplied with weevil. Some were in the *chrysalis* state, but generally in the *larva* or maggot state, and nearly all well grown. Of the 19 grains, 2 contained 3 weevil each, 8 contained 2 each, and the remaining 9 had one in each.

The results of these experiments seemed clearly to disprove all the prevailing opinions of the origin and propagation of weevil, and to establish that a few (and generally but very few) of their eggs are deposited on corn in the field, which usually do not hatch before the next summer, when they send forth the progenitors of several successive broods, produced in short periods of time, and rapidly maturing to propagate others. In this manner, their propagation, if not prevented by some means of destruction, would be, in geometrical progression, increasing by a very large ratio—and their numbers, at the end of a few generations might rise to an amount that would at first seem incredible and impossible. For example—suppose the number of eggs laid by each female weevil to be 200, (which is not an extravagant supposition, if we may judge by comparison with many other insects,) and that three successive broods are deposited in, and issue from corn during the warm season of any year. According to this supposition, a single female, laying her 200 eggs in October, will produce 200 millions of winged and perfect weevil in the last brood of the next autumn. The prodigious magnitude of this number, will be better comprehended, when I state that 600 barrels (or 3000 bushels) of corn, do not contain so many as 200 millions of grains. I will exhibit the rate of increase upon the foregoing supposition, and also at half of that ratio.

One pair of weevil, supposed to produce 200 eggs in October, which hatch early in July, making 100 females in the first generation, 10,000 in the second, in August, 1,000,000 in the third, in September, 100,000,000 in the fourth, in October, or 200,000,000, counting the males as equal in number.

But if the rate of increase is only half as great, or 50 pairs are produced from each female, the fourth generation so multiplied would amount to 12,500,000—which would be nearly as many as there are grains of corn in 40 barrels.

These examples are by no means intended to represent any possible actual increase, but to show that there is no want of procreative power to produce inconceivable numbers, from the smallest original stock, in all circumstances are favorable for the propagation and preservation of the race. This prodigious procreative power, though not repressed (as in most other animals) by any want of food, is greatly limited by unfavorable temperature, short summers, and all the enemies that prey on those feeble and helpless insects. It is only when these circumstances are guarded against, (as in my first experiment,) that some approach to the real rate of increase can be seen. The manner and rate of increase will serve to explain why more weevil may appear in the last week of a long warm season, than in all the previous time.

There are so many circumstances which, without being suspected to operate, may completely change the results of experiments, that we ought not to trust to the most decisive in appearance, without additional trials, and under varied circumstances. I therefore ask of others to repeat these experiments, and aid in establishing or overthrowing the conclusion which is irresistible, if there is no delusion in them, viz: That eggs of the weevil are laid on corn in the field, but in very small numbers: but that these few are sufficient to fill the whole crop with their progeny during the following summer. If these are truths, the most important inferences grow out of them, which will teach us how to restrain almost entirely the ravages of the *Moth-Weevil*.

If either of the three existing opinions of the origin of this insect is admitted as true, it serves to repress, as useless, every attempt to prevent the propagation of the weevil, or to destroy the insects after they assume the winged form, and have ceased to injure the grain. But it will not be so when we know that the first laying of eggs serves merely as the seed for the abundant and destructive broods which follow in the second and third generations. If we could prevent the few first eggs being laid—or could prevent their hatching—or could kill the first small brood as it hatches—either would remedy the evil. And, though altogether mistaken as to the propagation and habits of the insect, chance and observation have long ago taught us how to prevent the worst effects, both on wheat and corn. If we will attend to the truths now ascertained, and use carefully the proper means of prevention, there can be no more considerable danger from this cause. I will state some of the probable, as well as the already known means of prevention.

1. Some few eggs of the weevil are laid on the upper exposed grains, while in the field. This is proved by grains of very forward corn being found weevil-eaten when gathered. But these are so few, that even if they live and hatch, their direct damage would be not worth consideration. If all corn intended to be kept later than the 1st of July, was put up without shucking, that protection to the ear would prevent the second brood being laid in the corn—and perhaps the closeness of the bulk would prevent nearly all of the first small brood from hatching. This course would be directed by the supposed origin of weevil—and it is also supported by experience. Corn put up in the shuck, dry and clean, will be far better preserved from weevil than in any other way; and all corn intended for bread in summer and autumn, ought to be kept in that manner. I have kept large quantities in the shuck

(when the price was so low as to make selling inexpedient,) to the second, and sometimes the third summer after gathering, and found very little damage from weevil, compared to any shucked corn the next summer after gathering. To save room, and trouble in handling, the outer shucks of my corn had been broken from the ears in gathering, which lessened the protection against the weevil. If all the shucks had been left, the number of damaged grains would probably have been much fewer.

2. We have been told how to destroy the weevil in its winged state effectually by the fumes of burning sulphur, and even by the smell of the leaves of *Pride of China*. The last method has been published in the *Farmers' Register*, (No. 3,) and the first, I think, was in one of the early volumes of the *American Farmer*. Perhaps many other strong smelling vegetables mixed with the corn when put away, would serve to kill the early brood as fast as it was hatched. It is well known, that strong odors of many kinds are insupportable to some insects. Under my former opinion, that every grain that could suffer, already contained an egg, or a maggot, it seemed useless to kill the flying insects, after they had ceased to eat, and could do no more damage. But the case is very different, supposing a continued and rapid renewal of broods to go on. Upon this supposition it becomes important to try these, or other means, for killing every fly, if possible, after its leaving the grain.

3. But whether the winged weevil can be thus killed or not, if the foregoing means of prevention were used, we should be amply compensated by the improved quality of our bread, and of quantity as well as quality in all corn used after July. But it seems likely that another important benefit would be found, in saving the wheat. According to my views of weevil, the corn must furnish the greater part or all of the brood which afterwards fills the wheat with weevil eggs; and by preventing or destroying the existence of a few in the corn, we may prevent as many thousands reaching the wheat. The feeble and awkward flight of the weevil forbids the belief of its spreading rapidly, or being able to travel far, without destruction.

4. Early thrashing and cleaning wheat, (say by the 20th of July, in Lower Virginia,) prevents damage from weevil, even if the grain is kept through the summer—most probably because the first eggs are laid on the chaff, (as is supposed by the writer referred to above,) and, if so, are separated from the grain before they hatch. If the clean grain be kept spread too thin to heat, there will be very few weevil—and those few, we may suppose, proceed from parents furnished from the adjacent corn-houses, or the grains of wheat left in the straw. But, if they were a thousand times more numerous, they could not (according to the view taken,) affect early cleaned wheat, except the grains on the surface of the heap, because the flying weevil could not penetrate lower. This shows, that the less the surface is changed, the better; and if all seed wheat was kept in small casks (as flour barrels,) and the surface covered with a thin coat of quick lime, or some other dry powder, it seems likely that not a grain could be weevil-eaten. My seed wheat has never been better guarded than by being early cleaned and spread 6 or 8 inches thick over a floor. In this way, some slight damage from weevil may generally be found, but none worth consideration as a loss of value.

Wheat is also preserved from weevil by being bulked in the chaff—and this plan (of which I have no personal experience,) is said to be equally effectual. The security in this case proceeds from the heat produced, which (especially in wheat trodden out on the earth,) is sufficient to kill the eggs.

But if wheat remains in the straw until September, and is then cleaned, whether it is placed in large or small bulks, great injury from weevil is generally sure. The number of insects, already well advanced in growth, produce considerable heat, even in small

bulks of grain. I do not know whether it is animal heat, or the consequence of animal putrefaction; but it certainly acts to forward the hatching of other weevil, until, in some cases, the heap is entirely mixed with living and dead insects. In this state, all our wheat would be, if no means were used to prevent it.

5. It is probable that the exposure of corn to severe cold, will destroy the first laying of weevil eggs. I recollect having heard it stated, that early gathered corn was most damaged by weevil, and that leaving it in the field until late in winter, was almost a sure safeguard. Even if this was true, as a matter of practice, the remedy would be worse than the disease; but the fact would serve as another exemplification of the truth of the position taken as to the origin and habits of weevil. It is a remarkable fact, that last year, (1832) there was no damage from weevil to wheat, even when thrashed so late, that in other years it would have been worthless. I first learned this of a particular crop in my neighborhood, which the illness and death of the owner prevented being thrashed until late in September; and I afterwards heard it stated that the same absence of weevil was general. How corn was affected, I do not know, not having my attention drawn to it at the proper time. The preceding winter had been a very cold one for our country, and the one still earlier (1830-31,) had been severe, beyond precedent, for the previous 40 years. Possibly these two cold winters had nearly destroyed the weevil eggs in the corn, leaving almost none to infect the wheat.

6. The universal practice of our country, is to keep corn (in the ear) in open log cribs, through which the air can easily pass; and it is the general opinion, that such houses are necessary to keep the corn in the best condition. This I believe to be true, so far as it respects weevil, but not otherwise. The corn which was spoken of, as being so well kept, from two to three years, in the shuck, was in a closely planked barn, 32 feet square, and the lower story of which was nearly as full as it could be packed. Weevil are disposed to fly out every fair evening, which the open sides of our cribs permit without impediment—and most of them are destroyed by birds and bats. Where a few ears of corn are kept in a close drawer or chest, the damage from weevil is ten times as great, because none of the breeders are destroyed. For the same reason, if my corn in the close barn had not been protected by the shucks, every ear would, in the first summer, have been as completely riddled as are the few ears left in drawers.

From all the facts which have been presented, and the legitimate deductions therefrom, it seems scarcely doubtful that the depredations of weevil may be always easily, cheaply and effectually controlled. But this important and most desirable conclusion, depends on my facts and observations not being mistaken. And, to decide that point, I request the aid and corrections of others. However well assured I may feel, that my observations are correct, it still may be that they are incorrect in some important particulars. When we are mistaken as to causes, we are in great danger of also being mistaken as to their most obvious effects; and I am sensible of being somewhat exposed to this danger, when all my observations of the effects of weevil, until recently, were attended, and perhaps affected, by totally mistaken views of the origin and propagation of these insects. E. R.

Postscript.—After the foregoing piece had been finished, except inserting the close of the fourth experiment, some additional facts were observed, which may be worth notice, or serve to call the attention of more competent observers, to the habits of weevil.

The weather became again remarkably warm by the 18th September, on which day and the next, my thermometer, in the shade, and open air, rose to 90° and 90½°. This brought out a new supply of winged weevil, and they have continued active to this time, the 7th of October. There has been no cold weather

within this time, and the general temperature has been warm for the season. The crops of corn have matured uncommonly early this autumn, the greater part, on good land, being hard (though not dry) by the middle of September. Of course, these circumstances have allowed weevil an unusual length of time to deposit eggs on the ears in the field, and sufficient time and warmth for many of the insects to complete their growth, and come out to lay a second brood. The facts agree with this anticipation, which was founded on the views which have been presented. Since October 3d, I have examined several fields of corn, and find in plenty (what is generally of such rare occurrence,) ears showing weevil-eaten grains. It is only where the ear has outgrown the shuck, or otherwise was not covered by it, that the weevil holes are found—but of all such, very few are without one or more of these marks. But on new corn, standing near to houses containing old corn, or wheat, the weevil are far more numerous. I gathered a large ear, which had grown within 60 yards of a crib containing corn well stocked with weevil, and on it counted 89 grains, in which the insects were visible externally, or the holes through which they had already escaped. Some of these grains were so low on the ear, that they must have been securely covered until after the fodder was stripped, which, by killing the plant, caused the shuck to open, and gave admittance to the insects. Of course they had similar means of access to many ears, which did not protrude beyond their covering. A friend and neighbor, whom I had requested to examine his corn, informed me, that his new crop in the field is much more full of weevil, than the last year's crop, of which he has a large quantity (in ears) in his barn, and which we had lately examined, and found to be but little injured. He sent me the points of two ears, as specimens from his field: one had 20 and the other 18 visible weevil cells. The last was of late-ripe, (or flint) corn, and the other of the common large kind. I suppose he meant that these were specimens of the ears extending beyond the shuck, and near his corn house, as he stated the injury to be much greater there than at more distant parts of his field.

Before being directed, accidentally, to observe these unexpected facts, (and unprecedented, as it respects the great number of weevil in new corn,) I had noticed the old corn, and wheat retained for seed, on several different farms. In my own corn (September 19th,) very few weevil eaten grains were found, and but for the presence of some of the insects, it would have been supposed that no such damage had been sustained. But though none could be found within the bulk of ears, some few ears, (especially late ripe,) were found a little weevil-eaten on the highest part of the heap. My seed wheat, which was in a barn about 60 yards distant, had been thrashed late in July, fanned clean, and spread upon a floor 10 inches thick. A few winged weevil were seen crawling over the heap. No damaged grains were found within, or on the bulk, though doubtless there were some on the surface: the eye does not easily discover the eaten grains in wheat, even when they are so completely hollowed out, as to be easily crushed between the fingers. My barn and cribs had been erected so lately, that these were the first crops they had held—and no grain had ever been kept before within three quarters of a mile of that location. To this circumstance, together with the scarcity of weevil last year, and to my uniform practice of thrashing and seeding my wheat to market early, I attribute my singular exemption from weevil this year.

In other cribs, examined in the same neighborhood, there were found remarkable differences in the numbers of weevil, and without reasons for the difference being always apparent. They are generally more scarce than is usual, but some parcels of corn are very full. In some of the latter cases the wheat has not generally been thrashed early: and if all the facts could be ascertained, I have no doubt it would be seen, that by some neglect in previous management, at all

such places, a sufficient breeding stock of weevil had been suffered to remain, to produce the present abundant supply. Such a stock of breeders, it seems, is now in every crop of new corn, and I will venture to foretell that great and unusual injury will take place from this cause next summer, unless the winter should be very severe, or some artificial means of prevention should be resorted to. It will be especially requisite to thrash and clean the next crop of wheat as early as possible, and to keep in the shuck, all corn intended for late consumption.

On the 9th of October, I again examined the corn in my crib, where so few weevil had been found 17 days before. They had increased greatly though still few in number, compared to other places. The ears in the field, (about 100 yards distant from the grain houses,) which protruded from the shuck, generally showed some weevil holes—and on one, 16 such marks of well grown maggots were counted. But though the corn in the fields is most affected where nearest to old and weevil-eaten grain, the protruding ears in the most remote and sheltered situations also show more or less of the operations and presence of weevil. It seems evident, that these insects prefer the soft new corn, to the old, as a receptacle for their eggs—or otherwise, that the hatching and life of the maggots are more certain in the former.

Perhaps I have presumed too much on the patience of the readers of the Farmers' Register in treating this subject at such length—and I may be held as the more inexcusable, because unacquainted with that branch of natural history, to which the subject belongs. In this, as in many other respects, the entomologist might render most essential service to agriculture; and, if any one will deign to use, for this purpose, such rough materials as I may have furnished, I shall be content to have the worthless portion condemned and thrown aside. E. R.

(From the Rutherfordton Spectator.)

GAMA GRASS IN NORTH CAROLINA.

MR. ELMER:

Sir,—You may tell your subscribers by inserting this, that there is an abundance of the Gama Grass in this region. Benjamin Ellis, Esq. has it on his plantation, and Adam Reep and John C. Henderson, near Lincolnton, have it plenty on their farms. I gathered some yesterday, a stalk 8½ feet in length, and a blade of the fodder 5½ feet, but these were the longest; yet, all that is said in the prints that I have seen respecting it is true, and perhaps enough has not been said. I have had it in view as worthy the farmer's notice these twenty years, and shall now go ahead in its improvement. Its massy branches must be taken up and cut apart with an axe or some such tool, and divided like gardeners do the shallot—this is the method of raising it. It may be planted in checks one foot distant, and will soon interlock. The seeds are ravenously devoured by field rats, ground squirrels, &c. which will render that way of propagating it slow and difficult. AGRICOLA.

No Confidential city, Sept. 20.

(From the Southern Agriculturist.)

ON THE PRESERVATION OF POTATO SLIPS.

As this is the season of the year for gathering of potato slips; and as the crop this year is likely to be very small of that excellent and very valuable article of provision, the more perfectly it can be secured the better for the planter. I offer for the benefit of all, the result of a plan adopted from a recommendation in your valuable publication. It was tried by a gentleman who did not live to witness the success of the experiment. His negroes and stock were sold in the winter, and the provisions not disposed of until the spring, when from the high state of preservation in which they were found, they sold to much advantage. The perfect preservation of the potatoes was the

more remarkable, as the winter had been unusually severe.

The method adopted was to secure them in hills as fast as they were gathered. The hills were made in the usual way of pine-trash and corn-stalks, covered with earth. But they were a little larger than usual, with this particularity. A pine sapling about the size of a man's arm, clean of the bark, was stuck perpendicularly into the middle of the hill, with the small end downwards. The potatoes being thrown loosely round the stake to the usual height, and the covering well secured, the stake was withdrawn. A piece of dry bark, (half the round of a small tree,) was placed transversely over the top of the hill, and that covered with earth, so as to keep it in its place. The object of this arrangement, was certainly to give an opportunity for the moisture of the potatoes to escape through the space at first filled by the sapling, and under the arch of bark, while the potatoes were effectually protected from the changes and severe cold of the winter.

I hope some of your readers may be induced to try this plan and publish the result. I consider it no trifling advantage, that while the planter is using the contents of one hill, all the others continue undisturbed and sound, until they in turn are likewise consumed.

AN OBSERVER.

HORTICULTURE.

(From Goodsell's Genesee Farmer.)

AUTUMN MANAGEMENT OF GRAPE VINES.

The month of November is the proper time in this section of the country for pruning grape vines.—Many gentlemen in Western New York have with laudable zeal, commenced the cultivation of the vine, and some have already begun to realize a handsome remuneration for their trouble and expense which they have incurred, while others have been disappointed in their expectations. Disappointments have arisen from various causes, but the most fruitful has been an injudicious selection of varieties cultivated.

As a disposition to cultivate the vine in our country manifested itself, the public were presented with long catalogues of varieties, often amounting to several hundred, each particular variety recommended as having some peculiar valuable property, which rendered it desirable; each succeeding year furnishing some superior to those which have been produced. Thus gardens have been crowded with varieties which have proved comparatively useless, which might have been filled with those more profitable, had the proprietors been sufficiently informed as to their respective qualities.

The difference between American and foreign grapes, does not appear to be as well understood by most of our gardeners, as it should be, neither does the respective qualities of those cultivated and sold at different nurseries, as hardy American grapes, appear to be as familiar to those cultivating as would be desirable.

Among the American grapes cultivated, and named, the Isabella, Catawba, Muscadine and Bland, are the only ones which we have ever seen that promised to be worth cultivating in western New York. The Isabella and Catawba are undoubtedly the most profitable. The Muscadine is a free bearer and an early grape, but is not as fine for the table as the Bland, when it is fully ripe, but it is somewhat doubtful whether the seasons are long enough to mature it. The American varieties require different management from European. They do not require as short trimming, but should be allowed room to extend themselves. A vine of six years old, should be allowed to cover a trellis six feet high and at least twenty feet long.

November is the proper month for pruning American vines. In pruning, as many of the most vigorous

and well ripened shoots as will be sufficient to fill the trellis, should be selected. These when there is plenty of room should be left as long as the wood is well ripened. These may either be tied to the trellis at the time of pruning or be laid upon the ground, and allowed to remain there until next spring. Although our native vines endure the winter, yet I have thought those which remained under the snow until spring, were in better condition than those which were put upon the trellis in the fall. Where the branches cut off are designed to be set as cuttings, they should be cut from one foot to eighteen inches long according to the length of the joints, always preferring three or more joints, and cutting about an inch and a half above and below the end joints. Cuttings from American vines should be put in the ground in the fall, as they take root much better than when set in the spring.

European grapes when perfected are more delicate for table use, than any of the Americans. The vines are not sufficiently hardy to withstand our climate, but require to be buried through the winter. They should be pruned during the month of November, after which they should be laid upon the ground and covered a few inches deep with earth, and allowed to remain covered until after the frost of spring. In pruning, the shoots should be cut down to from one to three feet, leaving only the strongest and best ripened shoots, and those so selected that they may spread to advantage upon the trellis. In an open garden European vines seldom continue in a healthy condition more than four or five years. They are subject to be overgrown with the mildew which destroys both the fruit and the vine.

The most desirable among the European varieties are the Golden Chasselas or sweet water, White Froignac and Munier. The latter is one of the most hardy of the European varieties, is not so sweet as the chasselas, but a great bearer.

The mildew which grows upon the vine may be in a great measure destroyed by washing the vine with lime water.

In an orchard belonging to Mr. Pitchard, near Cloddock church, on the Monnow, there are 15 trees, the produce of which, it has been calculated by old cider makers, will yield from 1500 to 2000 gallons of prime cider. A hoghead (100 gallons) from one tree is reckoned the general maximum quantity; but these trees average considerably more.—*Hereford Times*.

RURAL ECONOMY.

(From Goodsell's Genesee Farmer.)

TO PRESERVE GARDEN VEGETABLES.

Beets, Carrots and Parsnips.—Those intended for family use during winter, should be taken out of the ground, and packed away in sand, either in bins, or by laying them heads and points in heaps with alternate layers of roots and sand. Beets should be taken out of the ground before the crowns are injured by frost.

It is the more common custom to allow parsnips to remain in the ground until spring, but we would recommend raising them in the fall and packing them in sand the same as beets or carrots. Parsnips will not be injured by the frost, if left in the ground through the winter, but when wanted it will be more difficult to procure them for cooking from the garden than the cellar during the severity of winter which is the season when they furnish the greatest addition to the table. If left in the ground until spring they soon vegetate, after which they are not considered as healthy as before their leaves put forth.

Subsify or Vegetable Oyster and Scorzonera.—The roots of these plants, which are used as a substitute for oysters in stews and for seasoning dishes, may be allowed to stand in the ground until spring. The

roots abound with a milky juice which is an essential part of the plant. This juice is more abundant in roots which remain in the ground, than those which have been housed through the winter. As they add much to the variety of the table, a few of them should be raised in every garden.

Winter Squashes.—These should be gathered before they are injured by the frost, and kept in a cold dry place free from frost. In gathering them, care should be taken that the stems are not broken off, which will prevent their long keeping. Some of the varieties, as the crookneck may be kept until spring, if proper attention is paid to their gathering, and the temperature of the room where they are placed. The Valparaiso cocoon and acorn squashes, are among the most desirable for winter keeping, and in addition to their use at the table as a vegetable, when made into that well known yankee luxury "pumpkin pie" they are certainly excellent. A very expeditious mode of making pumpkin pies has lately been introduced into this neighborhood, which does away the necessity of straining the material before making the pie. The material whether pumpkin or squash is prepared by grating and mixing it immediately with the milk, eggs, spices, &c. and baking. It is said by our good housewives that they require a little more baking than when prepared in the old way, but are thought by many to be superior.

Turnips.—There is now cultivated among us a great variety of turnips calculated for the different seasons. With proper attention, a farmer may supply his table with turnips as well as potatoes, most of the year. To preserve turnips in good condition, they should be closely trimmed and assorted, and packed in dry sand and kept in a dry place. If packed without sand, the more delicate varieties grow warm and soon become pithy. The yellow stone and yellow Swedish turnips are best for late keeping, the latter will continue firm until May.

Horse radish.—This as a condiment is relished by most people, and yet few families are supplied with it during winter. It is to be found in almost every neighborhood, and if dug in the fall, and put in the cellar, packed as beets or carrots, will be found to pay well for the trouble.

Celery.—This plant is not as much cultivated in gardens in the country as it should be. Many who cultivate it, neglect it after it is grown, and allow it to be destroyed by the frost. Those who wish it fresh upon the table during winter, should remove it carefully to a warm part of the cellar, and set the roots in good garden earth in a large box where it should be occasionally watered to keep it in a growing state as it is then more brittle. Some of it may be covered with straw and earth in the garden for spring. Covered in this way many of the stalks will rot, but what remains sound will be very crisp. It is not only useful as a salad, but is fine for putting into soups.

Gru's and Bolls.—On all occasions sweetened water should be the first application, and it should be very sweet, of this they fill themselves so full they are quite clumsy I believe after sucking one hour, then about five pints of meal or hominy is sufficient to discharge them without medicine, one pint of urine is sufficient, more will kill your horse, a decoction of elder toys, buds or bark one quart, of fish brine one quart. If your horse is eaten through you can smell it in his breath, if so you give the sweet water, and then, in one hour a strong decoction made of white oak bark, one quart; this will close the holes so as to give the other medicine, and may often succeed in saving your horse. Horses are naturally fond of sweets, and were you to give them a good suck once a year and in one hour a mess of hominy, would save you giving him medicine and your horse from much distress, especially your old horses after they rise seven years.

MISCELLANEOUS.

(From the New York Farmer.)

METHOD OF ATTRACTING AND DESTROYING RATS AND MICE.

Mr. Broad, a farmer at Truxton, Herefordshire, long sustained a reputation for the destruction of these pests. The following extract of a letter from T. A. Knight, Esq. to the Rev. J. Duncomb, affords an instance of Mr. B's success.

"Five box traps, nearly of the ordinary construction, being set, were examined by me about two o'clock, and the five traps contained fifteen rats. These were taken out, and the traps in succession set again; and as soon as I had seen the rats killed, I returned again to the traps, when I found the falling doors of all down and seven rats enclosed. Upon these being taken away, the traps were set again, and within less than twenty minutes, nine more rats were taken; when the traps were removed to be baited again. During the succeeding 36 hours, the rats continued to enter the traps, though more slowly; and upon Saturday morning 59 rats had been taken. Mr. Broad then returned home, leaving the traps properly baited, and informing me that he believed the extensive drains about my house and buildings, still contained ten or a dozen rats, which would come to the traps; and within the succeeding twenty-four hours, eight more rats, making in the whole 67, were taken. Subsequently not a single rat has been seen or heard about my house; and all my people agree with me in thinking, that not one remains alive here. Some of those destroyed were young, but much the greater part were very large and well fed, and apparently very old."

Mr. B. supposes the annual value of the wheat and oat crops of Great Britain, to be 25 millions sterling; that at least one fiftieth part to be destroyed by rats and mice, amounting to £500,000, or nearly two millions and a half dollars. The advantages, therefore, of any method to extirpate these pests must be great.

Mr. B. having at last published his secret, we have abridged his account as contained in the Edinburgh Farmer's Magazine.

"The size most approved of by Mr. Broad, is two feet long, eight inches wide, and nine inches deep, inside measure. In each door there is a grate made of iron wire; this grate should be four inches wide; it is intended to attract the rats when taken to the light, and prevent their injuring other parts of the trap with their teeth. The bridge upon which the rats tread, to occasion the falling of the doors, should be made of tin, or very thin iron plate, about six inches wide, and four broad, so as to extend nearly across the inside of the trap. And the neck of the bridge should be made of a light slender bar of iron, about two and a half inches long, so as to extend about two-thirds of an inch beyond the external surface of the side of the trap, for the purpose of setting it. A thin plate of iron or tin should be nailed upon the inside of the aperture through which the neck of the bridge passes, otherwise the rats will soon spoil the trap by enlarging that passage. The end of the bridge opposite to the neck, must be suspended about half an inch from the bottom or floor of the trap, by a single loop of iron wire, attached to a hook fixed in the side of the trap; by which means the bridge, being very loosely suspended, will move with the slightest pressure upon either side of it, and the trap will be made to strike by the weight of a small mouse.

"The trap should be made of elm, birch, or poplar boards, which are without scent. The wood should be well seasoned, otherwise the boards will be subject to warp, and the doors, in consequence, will not fall perfectly:

"Where a number of convenient and proper places for setting the traps can be had, it is advisable to set a considerable number of engines to work at once, so that much destruction may be made in a short time;

for it will sometimes require, in taking a hundred rats, more trouble to destroy the last five than the preceding ninety-five. Few situations, however, require more than half a dozen traps.

"The materials for attracting rats, are, 1st, the oil of carraways, and 2d, good pale malt, ground for brewing and not discolored in the drying.

"The proportion of the oil of carraways to the malt, about 1 to 9,000.

"Much care must be taken in preparing and setting the traps; and the most trifling deviation from the following instructions, will often destroy all chance of success. Be provided with as many trusses of sweet clean straw as you have traps, and take from each truss a small bundle, about as much when compressed in the hands as will be an inch in diameter. Then take a small vial bottle, the neck of which is about one-third of an inch wide, and which contains half an ounce of oil of carraways; invert the bottle upon the palm of your hand, letting no more of its contents escape, than that which has adhered to the hand, whilst the bottle has been inverted. Rub your hands then well together, and draw the straw through them, bending it so as to render it soft and flexible. Let it then be placed lengthways in the trap, and laid smoothly and evenly to cover the bridge, and every part of the floor of the trap, regularly. Then take five half-pints of the malt; place it in a large basin; invert the vial of the oil of carraways upon the palm of the hand, and take from it the quantity which adheres, as already directed; rub the hands together so as to spread the oil regularly over them; then take up successive portions of the malt in each hand and subsequently with both hands, rubbing it between them, that every part of it may be equally scented. Much accuracy is here necessary, for if the quantity of the oil of carraways be too great, the rats will not touch the malt till the scent is partly gone off. "Let about half a pint of the malt be thrown into each trap, by the hand of the person who has prepared it, scattering it rather regularly over every part of the floor. Place the traps then in the situation where they are to remain, and secure the doors from falling, by placing the pin just at the height they are to stand, when the traps are set. Divide each truss of straw into half a dozen parcels, and put a band round each; place two or three of these at each end of every trap, and sprinkle a few loose straws over each, so as in some degree to conceal the traps from the eyes of the rats.

"The following morning the traps may be looked at; and if the rats be in any degree numerous, the whole of the malt will generally be eaten, and the scented straw entirely taken away. These must be then prepared as before, and replaced according to the preceding direction, and the traps and trusses of straw must be left as exactly as possible in the order they were at first, for the rats are suspicious of the least innovation.

"After three portions of the prepared malt, which have been put into the traps, have been eaten in as many successive days, the rats will have acquired sufficient confidence to enter the traps without distrust, and catching them may then commence: but then the traps must be previously baited again, and the straw if wanted be renewed; and every thing must be made to appear, as nearly as possible, in the situation it was before the traps were set. In baiting them, the hand of the person who has been preparing the malt, and which will of course be strongly scented, must alone be introduced into the traps.

"The morning is generally the best time to commence catching, as the rats may be most conveniently taken out during the day.

"To take the rats from the traps, a long and rather slender bag, made of some thin material, which will admit a moderate quantity of light, must be provided, and into this the rats will be easily driven from the traps by introducing a slender stick through the wire grate at one end of the trap, and raising the door at

the other end, to which the bag is applied. During this, or any other operation, the hand must not, on any account, be introduced into the traps, unless it be previously scented, else no further success must be expected; even the part of the little stick which is introduced through the grate of the door, ought never to be touched with an unprepared hand.

"Particular care must be taken not to hurt the rats in taking them from the traps, for their cries never fail to excite terror and mistrust to all in the vicinity; it will therefore, be proper to take the rats to some distance to destroy them. The greatest degree of precaution should also be used not to suffer a rat to escape after being taken, for animals have generally powers of conveying their apprehensions of danger to each other.

"The traps will require to have a small quantity of prepared malt thrown into them each day, and it will be necessary to renew the scented straw once in five or six days. It is always advantageous to take out the rats as soon as possible after the rats have struck; and therefore, when the rats are numerous, and have entered the traps freely, it will not be eligible to let them remain set, when they are left for the night.

"Cats and dogs should be prevented from approaching the traps; and no person, except those employed previously in baiting and setting them, should be permitted to touch them; for animals of many kinds probably distinguish individuals of the human species from each other, by their scent and smell.

"The trap to be used for the destruction of mice may be similar in construction to those recommended for rats, but much smaller. Traps capable of taking many at once, or of perpetual acting, might probably be invented.

"As a bait for the barn and the long tailed field mouse, take about half an ounce of rich cheese, toast it moderately without burning it, and then put upon it with a slender feather, or the point of the finger, a very small quantity of the oil of carraways, one tenth of a grain will be sufficient for each trap. The bait thus prepared should be put upon the bridge of the trap whilst warm, and two small spikes should be there fixed to receive and hold it. When the traps are to be set in the garden, or forcing-house, where the short-tailed field mouse often does much injury, it will be proper to place a piece of carrot under the scented cheese; for this mouse, the only remaining mischievous species, is not fond of animal substances, though it appears, as strongly attracted by the oil of carraways, in combination with its favorite food, as any of its congeners. In buildings of every kind, the trap will succeed best if placed close against a wall, and at a small distance from the passages through which the mice are supposed to enter, as recommended for rats; but it will not be necessary to mask the trap at all, nor to bait it previously to being set.

Mr. Argule, Golnitz, in Altenburg, has in his garden an apple tree, which in the year 1816, bore 236 sorts of apples and other fruits; in fact, the tree has on it above 300 sorts, but these last grafted have not yet borne. This gentleman has effected this curiosity for his amusement by inoculating and grafting, and has fastened to every branch a little board with the name of the sort of apple it bears. The tree has a strange appearance from the various shapes and colors of the leaves, blossom and fruit. Many years ago, the Russians bivouacked near this tree, and were so surprised at the strange shape of it, and the number of little boards, that they did not injure it, though they cut down other fruit trees for firewood. (Poulson).

An excellent Cure for a Sprain.—Take two pieces of red flannel, soak one of them with beef or pork pickle, (beef is best) and place it on the wrist or ankle strained, wrap the other piece over it, and the pain will subside in a very short time.

Prices Current in New York, November 16.

Best wheat, yellow, 18 a 20. *Cotton*, New Orleans, 14 1/2 a 18; Upland, 13 a 16 1/2; Alabama, 13 a 17 1/2. *Cotton* Bagging, Hemp, 3d. 20 a 22; Flax, 18 a 19. *Flax*, American, 20 a 22. *Flaxseed*, 7 bush. clean, — a —; rough, 13.50 a —. *Flour*, N. York, bbl. 5.56 a 5.62; Canal, 5.69 a 5.88; Balt. Howard st. 6.25 a —; Rhd city mills, 7.00 a —; country, 5.75 a 6.00; Alexandria, 5.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.62 a 3.75, per hhd. 16.50 a —. *Grain*, Wheat, North, — a —; Vir. 1.22 a 1.24; Rye, North, .80 a —; Corn, Vel. North, .78 a .79. *Barley*, .72 a —; Oats, South and North, .35 a .40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; *Provisions*, Beef, mess, 8.50 a 9.00; prime, — a —; cargo, 5.50 a 5.75; Pork, mess, bbl. 16.75 a 17.00 prime, 14.75 a 12.00; Lard, 10 1/2 a 11.

JACKS.

I have for sale Two JACKS—one is a very good one, 12 1/2 hands high, very stout built, and a good foal getter, he is of excellent blood and can be had for \$250, which is very low for him.

The other is a small Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address I. I. HITCHCOCK,
American Farmer Establishment.
A good Jenny is wanted by the owner of the last.

RAMS AND EWES.

One Ram of last spring's yearling, of the purest Bakewell blood, at \$75.

One do. one and a half year's old, with a defect* at \$50.
Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.
These beautiful and valuable animals, may be had by application to I. I. HITCHCOCK,
American Farmer Establishment.

*His testicles are always up in his body—in every other respect he is a very fine ram.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own, yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,
American Farmer Establishment.

NEW CHINESE MULBERRY.

(*Morus Multicaulis*.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK,
American Farmer Establishment.

DEVON BULL.

The thorough bred bull Othello, 4 years old last spring, if immediately applied for, will be sold for \$100. Apply to

I. I. HITCHCOCK,
American Farmer Establishment.

YOUNG HECTOR.

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK,
American Farmer Establishment.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK,
American Farmer Establishment.

GRASS SEEDS.

Perennial rye grass, at \$4 a bushel.
Poa pratensis (fuztop) for lawns, at 25 cts a quart.
Tall Meadow Oat Grass at \$2 50 a bushel.

For sale at this Establishment, by
I. I. HITCHCOCK.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Shorthorn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK,
American Farmer Establishment.

MILK WHITE TURKIES.

A few pair of these beautiful fowls, are for sale at this Establishment, at \$5 a pair.

They are equal in every respect to any other known breed, and for beauty far superior.

I. I. HITCHCOCK,
American Farmer Establishment.

FINE CALVES.

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Shorthorn and half Alderney. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

I. I. HITCHCOCK,

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS, Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1883, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrapery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 19.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 4.00 a 8.00. The inspections of the week comprise 285 hhd. Maryland; 21 hhd. Ohio—total 306 hhd.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d quality, 6.25 a 6.75; super Howard street, 5.87 1/2 a —; (wagon price, 5.69, a 5.75); city mills, 5.62 1/2 a 5.75; city mills, extra, 6.00 a —.—CORN MEAL, per 100 lbs. 1.50 a 1.56.—GRAIN, red wheat, 1.15 a 1.18; white do 1.20 a 1.27.—Corn, yellow, 63 a 65; white, 62 a 63; in the ear, 2.50 a — per bbl.; RYE, 70 a —; chop rye, per 100 lbs. 1.50 a —.—OATS, 33 a 35.—BEANS, 1.25 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 95 a —.—CLOVERSEED, 5.00 a 6.00.—TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—Lucerne 37 1/2 a — lb.—BARLEY, — a —.—FLAXSEED, 1.50 a 1.62 1/2.—COTTON, Va. 14 a 15; Lou. 16 a 18; Alab. 14 a 17; Tenn. 14 a 15; Upland 15 a 16.—WHISKEY, hhd. 1st p. 28 a —; in bbls. 29 a 30.—WOOL, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 37 1/2 a —.—Plaster Paris, per ton, 3.87 1/2 a —; ground, 1.37 1/2 a —.—hbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.00 a 5.50.—Oak wood, 3.25 a 3.75; Hickory, 4.75 a 5.00; Pine, 2.50.

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The American Farmer,

Edited and published by I. IRVINE HITCHCOCK, is issued every Friday from the "Establishment," No. 16 South Calvert street, Baltimore, Md.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

5. DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St Paul and Market streets

THE FARMER.

BALTIMORE, FRIDAY, NOV. 29, 1833.

TO RID WHEAT FIELDS OF GARLIC.—A farmer recently brought to our market his crop of wheat which was remarked as being free of garlic. On inquiry how he made it so, he observed that for some years past he had cleared his wheat fields of this pest in the following manner. Just as the wheat is about to head out, he turns his sheep into his fields, which pick out all the garlic without injuring the wheat. If any individual of the flock is found so *human* as to prefer the wheat to the garlic—which he says is seldom the case, he is expelled the field for his bad taste. The gentleman added, that little or no damage is done to the wheat by the trailing, as it soon tightens up again. This is to us a new idea, and we give it out as we received it. We think the experiment worth a trial, and we would try it, but for one reason—we have no wheat field.

THE MAIL.—We have hitherto forbore to complain, though feeling keenly the inconvenience and loss we sustain by the want of more careful attention on the part of Postmasters. We belong not to the class of habitual grumblers, who complain of course, with or without reason. We are aware that in an establishment so extensive as that of the U. S. Mail, the most careful and industrious head of the department would find his hands full to keep matters straight throughout the country, but we must be permitted to say, that we think the mail establishment is not as well conducted as it might be. Within the last two or three years our losses have been heavy, not merely in the miscarriage of bank notes, but in the discontinuance of subscribers, who have relinquished their subscriptions *because they could not get their papers by mail*. These cases have been numerous, and are constantly occurring. As an illustration of our case we give the following extracts from a business letter just received from a friend near Philadelphia, omitting names. The post office alluded to is in Philadelphia county, near the city.

MR. I. I. HITCHCOCK: Nov. 22, 1833.

Dear Sir.—I received your letter (containing order for —) at sun-set last evening, and, to my surprise, found that it was dated, and post marked, the 16th November. I immediately called on our Post-master here to explain the cause of this strange delay, and he acknowledged that the letter had been received at his office on the morning of the 20th,* since which my boy has been three times to the office to inquire for letters for me, and was each time told there were none. The fact is this, (and I fear this practice is too common throughout the country,) our post-master is frequently absent, and the mail is opened, sometimes by his wife, and frequently by his children, and others in his family. The letters and papers are taken out, and placed on a shelf, in the bar room of the tavern, or in a small desk, which is open to all the family, and others who happen to enter the bar. When a letter or paper is applied for, one of the women, or one of the children, (as was the case in this instance) tosses the letters and papers about, and produces the looked-for article, or, if they happen to be in haste, answer that "there is none." If, however, the applicant is not satisfied, he approaches the parcel, and may turn and handle them, until he finds his letter; or perhaps, it may frequently happen, that *he will find one that will suit him*.

For my own part, I am in hopes that it will be some time before such neglect will again occur with

letters for me. So that you may venture to address as usual. But the letter will not reach me until the second day, by the present arrangement.

SOUND is said to move through the atmosphere at the rate of 1142 feet per second. It is proposed by a writer in Goodsell's Genesee Farmer, that pipes be laid under railroads and in the banks of canals, for the conveyance of intelligence between distant points. He thinks suitable pipes might be bought and laid down for one hundred dollars a mile [guess he is mistaken.] Experiments in England have proved that the human voice may be heard through pipes 25 or 30 miles. The principle is doubtless correct, and the application of it to practice seems a much simpler matter than the use of steam as a motive power. Such a mode of transmitting intelligence would certainly be exceedingly valuable.

A writer in the Horticultural Register, gives the following receipt, which he says, he has tried for many years with complete success.

To destroy insects on trees.

2 oz. nux vomica,
2 oz. soft soap,
1 lb. tobacco,
4 pt. spirits of turpentine,
8 gallons of water.

Boil them, all together, down to six gallons and use it milk warm; the trees are to be carefully dressed with it, by dabbing it on with a sponge.

We copy the following from the Poughkeepsie Journal, with the hope that the statement may act as an incentive to our readers as well as to those of the Journal.

LARGE SQUASHES.—We are indebted to E. Holbrook, Esq. for several (some uncommonly large and beautiful) squashes grown on his farm at Hyde Park. One, a yellow crooked-necked winter squash, weighs 194 lbs. Another, called the Lima Cocoonut squash, weighs 224 lbs. The latter variety is said to have been brought from Lima, some years since by Commodore Porter. It is a beautiful article, and makes delicious pies, as we can testify. We have from the same gentleman some superior Ruta Baga Turnips. Mr. H. has one of the most beautiful situations on the Hudson, and by his zealous devotion to Horticultural and Agricultural improvements, has secured to himself a profusion of all the fruits and other good things that can be produced in our climate. A friend who is familiar with his farming operations, has favored us with the following account of some of his crops.

MR. POTTER.—Dear Sir:—Perusing with much pleasure your valuable Journal and observing the interest you take in Agricultural communications, I think it proper to state to you as an incentive to Agriculturists the produce of several crops raised by E. Holbrook, Esq. this season on his farm at Hyde Park, viz:

Pink Eye Potatoes, cultivated at a small expense nearly the whole having been performed with the plough, 780 bushels per acre.

Indian Corn 70 bushels 1 peck per acre (shelled.)

Ruta Baga Turnips 1089 bushels, weighing 42 lbs. per bushel, or 33 tons, 3 quarters, 18 lbs. nett, per acre.

The measurement of all was made by disinterested persons on the farm, who are willing to testify to the production.

Should you think this worthy a place in your paper, you are at liberty to publish it.

AN AGRICULTURIST.

Hyde Park, Nov. 12, 1833.

There was wisdom in the thrifty advice of the Scot to his son: "Be eye sticking in a bit tree; it grows while you sleep!"

EARLY SNOW.—The present season seems remarkable for early snow. In the northern states stern winter hung out his white flag some weeks ago. In the neighborhood of the great lakes the snow is in many places from one to two feet deep, and sleighs are the vehicles in common use. The Steam boat from Albany, came into dock at New York, on Tuesday last, with her wheel houses covered with snow three inches deep.

LARGE BEET.—Was raised in the garden of a gentleman of Southern Virginia, a beet which measured in length, 17 inches, 24 in circumference, and weighed 11 pounds. The same gentleman gathered from a tree in his orchard, an apple, which weighed 1 lb. 4 oz.

(From the Baltimore Gazette.)

THE COTTON CROP.

We find in the North Carolina Observer a condensed statement, showing the quantity of Cotton grown and consumed in, and exported from the U. States, during the year ending September 30, 1833. Believing it will possess interest for many of our readers, we give it a place in our columns.

The exports from New Orleans reach the enormous total of 416,877 bales; but deduct from this 14,749 bales of the crop of the previous year, &c. &c. it leaves bales 403,443

(Same period 1832, 322,635)	
The exports from Florida	23,641
(Same period 1832, 22,651 bales.)	
Exports from Alabama	129,366
(Same period 1832, 126,921.)	
Exports from Georgia	271,025
(Same period 1832, 276,437.)	
Exports from South Carolina	181,876
(Same period 1832, 173,872.)	
Exports from North Carolina, (of which only 517 bales went to foreign ports.)	30,258
(Same period 1832, 28,462.)	
Exports from Virginia	30,829
(Same period 1832, 37,500.)	

Total crop of 1832-3	1,070,438
Total crop of 1831-2	987,477

Increase	82,961
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The total exports to Foreign ports	867,455
(Of which 630,245 bales were to England.)	

Ditto last year	891,723
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Decrease	24,275
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Consumption in the United States.	
Quantity consumed, in 1832-3	194,412 bales
do 1831-2	173,800
do 1830-1	182,143
do 1829-30	126,512
do 1828-9	111,850
do 1827-8	120,563
do 1826-7	103,493

N. B. The quantity taken for Home Manufacture, as shown by the above statement, does not include any cotton spun in the cotton growing States. We have no means of ascertaining the quantity taken for domestic use in the States south and west of the Potomac, and if we had, we are not aware of any practical use that could be made of the information.

Growth.	
Total crop of 1821-5	560,000 bales
do 1825-6	710,000
do 1826-7	937,000
do 1827-8	857,744
do 1828-30	976,315
do 1830-31	1,038,848
do 1831-32	987,478
do 1832-33	1,070,438

* Where had it lost two days already in its transit, from Baltimore to the office in question?

AGRICULTURE.

(From the Farmers' Register.)

THE IMPROVEMENTS ON THE WESTOVER FARM.
PRODUCED BY CLOVER AND THE FOUR-SHIFT
ROTATION.

Westover, August 20, 1833.

To the Editor of the Farmers' Register:

Dear Sir.—I have here endeavored to answer yours of July last, in the best manner my feeble abilities will allow. You desire me to give you—

"A full and detailed statement of my manner of making wheat on clover lay; the improvement thereby made at Westover; and my opinions, as to what extent (on other soils,) the practice will be found suitable; and all other opinions I may think proper to offer on the subject."

You desire, too, "an expression of my opinion as to the danger of injuring the productiveness of soils by exposure to the sun, (as is necessary in August fallows,) and whether the advantages of my system can be expected on light soils, provided they are made capable of producing good clover."

And finally, you desire me "to communicate the commencement, progress and results of the improvement made in Curles' Neck."

My preparation for the wheat crop is commenced, as on as the previous one is disposed of; usually, from the 1st to the 15th of August. The land for fallow, which is a clover lay, and in eleven feet beds, is reversed with large McCormick, or Davis ploughs, as deep as it can be done with three or four horses. It frequently happens, that the land is too hard for the ploughing to be done well by one furrow. When this is the case, we are obliged to trench plough, (or run one after the other in the same furrow.) As our time is limited, there must be none lost. And I have generally found, after dry fallows, the succeeding wheat crop to be much better—which is a strong inducement for us to persevere. If the land is in order, it is immediately harrowed; but if the ploughing should be done in a very dry season, the clods will be too hard for the successful use of the harrow. It is therefore left until a rain, when all the harrows are started and continued, until the fallowed land is harrowed over, or till the harrows have caught the ploughs. If done when the land is hard, which is more frequently the case at this season of the year, the time and labor of the teams will be thrown away, as the harrows will make but little impression on the clods, and close but few of the seams left by the plough. In such cases, I have found great benefit from the use of a heavy roller, which facilitates greatly the operation of pulverizing the earth. No farther preparation is necessary, but repeated harrowings, until the ground is gotten in such order, that the wheat will be well covered by the harrows. But if the season has been a wet one, the land will be filthy with grass and weeds. You are then obliged to re-fallow the land with small two horse ploughs, or to use the double shovel plough, going merely deep enough to destroy the grass and filth, and to put the same beyond the reach of the harrows. At this season, the earth is sometimes baked very hard by heavy rains just before seeding, and before much grass can spring up. In such cases I recommend the double shovel, as one of the best instruments I have ever used for putting in wheat on fallow land.

I have scarcely ever found it advisable to commence seeding wheat sooner than the 10th October, though this should be regulated by the season; if sowed earlier, it is generally injured by the fly, and if the land is much infested by the partridge pea, it should be postponed until we have some cool weather, that the pea may vegetate; then by shallow cultivation, it may be kept from injuring that crop. It is a remarkable fact, that the partridge pea only comes up in cool weather. The plantation on which I live is

abundantly set in this grass; yet I have never been much pestered with it in my wheat crops, owing to my leaving such parts as are very badly beset with it unploughed, until cool weather throws up the pea; it is then slightly ploughed, or repeatedly harrowed; and a second crop will not make its appearance that year. If, however, your re-fallow is too deep, you return the seeds of the pea to the surface, or near thereto, which were before too deep to vegetate; and, consequently, you have returned upon you that very crop you were attempting to destroy. I am convinced that by pursuing this course and mowing your fallow field, (or such parts of it as are very much infested with this pest,) as soon as it gets into pod, it might be exterminated from our fields altogether. If mowed in this state, there will be no second crop of pea, and still the season will not be too far advanced to have a good crop of clover.

The quantity of wheat seeded to the acre, should be regulated by the time of seeding, varying from 4 to 6 pecks; if sown from the 10th to 25th Oct. I am inclined to think five pecks sufficient for any land that is well prepared. But if later, the land will require more grain, as it will have less time to come up and branch, before the weather gets too cold, while more perishes in the ground. As a proof of this, in the season before the last, between the 10th and 20th of October, I seeded on a field of inferior land, one bushel of purple straw to the acre; and in November thereafter, I seeded 12 bushels of the same sort of wheat, on much superior land, and the wheat on the inferior land was much thicker, doubly as much so, apparently in the spring. The later the seeding, the thicker it should be; and if possible, it should never be later than the 10th of November. The fallow field being all ready by the 10th of October, we start every thing to getting the wheat in as soon as possible; the seed-man goes on, followed by the harrows. The bed furrows are then opened and straightened, where they require it by the plough; then the cross furrows, (or grips,) are afterwards well opened with hoes and spades; and finally, the whole is chopped over by the hoe hands. These operations should be carried on as much together as possible, so that every night the whole will be finished. If a heavy rain should catch the land with the wheat sowed and not dragged, the wheat will most probably sprout before it can be harrowed in, and the other operations will be impeded in the same way. I had six beds caught in this situation last fall; not wishing to carry back to the barn a remnant of wheat, as there was no appearance of rain. We had, however, a heavy rain during the night; and next day, the wheat commenced sprouting before the land was in order for the drags. The consequence was, that we were obliged to harrow it in wet; these beds were perceptibly worse the whole year, the land became very much baked, when it got dry, and the crop on it never recovered.

The following operations over, I commence on the corn land, though it rarely happens that the corn is sufficiently matured to be cut down as early as the 10th of October. The corn rows being 5½ feet distance, two of these are thrown together, making eleven feet beds. The ploughing here is done equally as deep as the clover lay; perhaps deeper, as the land is more easily ploughed, being cultivated during the summer. It is a matter of great importance to deepen with the ploughs our stiff soils, as by turning up some of the subsoil it is pulverized by the frost of the winter. It is of great importance also, that the corn land intended for wheat, should be kept clean of grass, otherwise it would impede the plough, and consequently take much longer to put in your wheat, and leave necessarily many hollows and irregular cavities, into which the wheat will fall, and probably perish; owing to the depth at which the seeds will have to vegetate; I greatly prefer eleven or twelve feet beds for wheat on our stiff lands. By throwing two corn rows together, the beds are not raised too high, while the water is more easily drained from them. The

ploughing and draining of our stiff soils thoroughly, is unquestionably the most important operation in farming; and many of our barren, (and as some think worn out) soils may be easily reclaimed, and brought into profitable cultivation by more attention to it. Ploughing to the depth of from 8 to 10 inches, and making good drains in every depression of the soil where water is likely to stand, and opening trenches for the water quickly to pass off, cannot be too closely attended to, otherwise the land becomes 'sodded,' soured and sterile, by being saturated with water. By deep ploughing, the water is more readily absorbed, and the ditches and grips being sufficiently spacious, carry it off immediately. I had a field four years ago, which suffered so much for the want of good ploughing and draining, that there was very little or no growth on the greater part of it, except blue and hen's nest grass; it was well ploughed up for corn during the winter of 1829, ditched and furrowed, and so thoroughly reclaimed, that it promised this season after a clover lay, to produce 30 bushels of wheat to the acre. When in fallow before, it was scarcely high enough to be cut, as I am informed by my neighbors. It took freely in clover, with but very little manure applied to any of it. The land seemed to be freshened and revived from its sterility after the softening qualities of the frost had passed away, and it changed from a white, to a good loam color.

The little, and as yet very imperfect improvements I have bestowed on the Westover estate, may be attributed principally to the two operations of ploughing and draining. These may be justly termed the *parabulum vite* of profitable land. Every estate which has been subjected to the disastrous operations of the three shift system, and irregular rotations of crops, may be soon made by these means and the proper application of clover, to double, and finally to treble the product in wheat. The four shift system, and the great advantages which result from it, have been lately so clearly and forcibly illustrated by my friend Mr. Hill Carter, (to whose skill, judgment and intelligence, James River farmers in Lower Virginia are so greatly indebted,) that I shall be very brief in detailing my own experience of this system.

The Westover estate (with the addition of several hundred acres I have added to it, for the purpose of standing pasturage,) contains about 1200 acres; whereof rather more than 400 acres are at present arable land. This area (of 400,) is pretty nearly equally divided by a lane running through it, from north to south; each half is then divided by a turning row running east and west, making four fields of 100 acres each. The remainder being all converted into a standing pasture.

I here give an account of the wheat and corn made each year, and the product of each field; shewing the difference between corn and fallow land, as taken from my farming memoranda.

Year.	Wheat made on fallow.	Wheat made on corn land.	Whole crop of wheat.	Crop of corn.
	Bushels.	Bushels.	Bushels.	Barrels.
1830.	1,600	789	2,389	250
1831.	1,730	844	2,574	375
1832.	3,000	991	3,991	500

1830. Late in the fall of 1829, I purchased the estate, with the privilege of seeding a crop of wheat, too late almost to undertake fallowing, but nevertheless I got all the land ready, (viz. 100 acres) by the 17th October. It was sowed immediately after ploughing, and most of it was filthy, and but very partially taken in clover. I made out by December, to put in wheat 200 acres; this crop as above stated, yielded 2,389 bushels. You will discover from the above table of crops, that the fallow land produced double that of the corn; although the corn land was much the best. Wherever the clover was tolerably good, the wheat was greatly better. All the manure

was applied to corn land. We had in corn, the field alluded to in the first part of this communication, and which was apparently so very poor, that it produced only 250 barrels by great exertions.

1831. The crop of this year was 2,574 bushels. The fallow land producing rather more than double as much as the corn. The corn crop increased 125 barrels. Not more than half the fallow field was sowed in clover, by my predecessor, believing it too poor to produce it. The portion which had no clover on it, was very much injured by the fly, and produced but little, although sowed in good time. The clover land produced very heavy wheat. The same land, when in wheat two years before, I am told, produced only about eleven hundred bushels; all the manure was again applied to the corn land. The crop was considerably injured by the rain before it was thrashed.

1832. This was the first season we had the full benefit of a clover fallow. All the field having been sowed, it took remarkably well, and had a good clover lay. The crop was 3,991 bushels of good wheat, three thousand of which we reaped from the clover fallow of 100 acres. The caterpillar injured it fully 300 bushels. This would be attested by several gentlemen who examined the field particularly; and I am confident of it myself, from thrashing. The injury from caterpillars, was confined almost entirely to a rich bottom. When we came to the injured wheat in thrashing, we could run the machine one hour and a half without stopping to clean up. The balance only one hour. The corn land made but an indifferent crop of wheat; the cold weather having set in sooner than usual, the seed did not come up. About 60 acres, scarcely brought the seed sown. It will be remembered, that the corn land had nearly all the manure made on the estate, it being applied in the spring for corn. This course of manuring corn land is pursued, rather from necessity than choice; not having time in the fall, with our limited means to haul it out. I am not convinced, however, but that it is the most judicious application of it. The corn crop derives the benefit of it; the wheat is always better; and it insures the clover's taking. I have never been able to manure as great a surface as some of my neighbors, never having got over more land than from 30 to 35 acres; perhaps, this year I may reach 40. We use every exertion in our power to accumulate it. The crop of corn increased to 500 barrels.

1833. The crop of this year promised ample returns for our labor. We had a fine clover lay on the field before alluded to. It took in clover thoroughly, to the astonishment of every one, and the crop promised fully as much as the one last year. It all tumbled from its luxuriance. The wheat on corn land was much better than we had ever had it before. The 200 acres, it was thought before the rains set in, would produce 5,000 bushels; it is not yet ascertained what the crop will be, but not half.* The corn crop this year is uncommonly good, and it is supposed will yield 800 barrels.

It will be perceived from the foregoing, that great benefits were derived from the clover and fallow system; laboring too, under many disadvantages. We work regularly only 14 laborers; some very inefficient—11 horses, and but few oxen, not being able to keep them on account of the distemper. To enable a just exhibition of the four shift and fallow system, these

* Mr. Selden has but slightly alluded to the cause of so great a reduction in the expected amount of his wheat crop of this year—and indeed, the cause was so general through Lower Virginia, and the effects so well made known by heavy losses to every farmer, that more full explanation is not needed in this region, and at this time. But it may be necessary to state to distant readers, that the unexampled quantity and continuance of rain in May, and the early part of June, caused a diminution of at least half the expected amount of our wheat crops, and that very few individuals sustained a smaller proportional loss. [Ed. Far. Reg.]

numbers should be increased to nearly double, for we have never been able to get in our wheat crops sooner than the 20th November. It may be supposed that the corn land has never had justice done it, in being sown so much later than the fallow. This no doubt is the case; but I have frequently sown some of both the same day, and the fallow invariably yields double or nearly so. The clover land ripens sooner and is less liable to rust.

It is astonishing that clover is not more extensively used in Lower Virginia. It is unquestionably the best manure used for wheat. I should prefer an acre of land well manured with clover, to one with stable manure; and none so cheap. The cost, with plaster, being not much more than \$1 per acre; which will give a profit of 300 per cent. with only the trifling additional expense of sowing it on the land. We have derived great benefit from the use of plaster of paris, and sow it invariably on the weaker parts of the field. Never having failed in getting my clover to live and thrive well on my corn land, I will here give an account of the mode in which it is sowed, &c. We commenced sowing between the middle and last of February; before the cracks left by the frost are closed. If the land is frozen, the better; for when it thaws, the seed will be covered with the earth; and when that is accomplished, there will be no danger of its being killed by the frost and hard weather. The failure most generally is owing to the seeds sprouting on the surface, and nothing to protect the tender shoot. We put from 6 to 8 pints to the acre, being regulated by the condition of the land to receive it and the seed. It is rolled in plaster; one portion of seed and two of plaster—the seed being first made wet. This is done to enable the seedsmen to sow it regularly, as it will give him a good handul—and acts as a stimulant to the young plant. In 10 years experience, I have never failed in getting it to thrive well on corn land, though I have on fallow. I am inclined to think a previous hoe crop, almost essential to its success.

If the fact is admitted, that a clover lay is a good manuring for the land, you must at once admit the four field system the best to be pursued on our James River lands—one-third of the whole farm being thus annually manured, and three-fourths yielding a good grain crop. Under no other system can you manure as much land, and at the same time reap as much grain, and consequently, profit. Your fields are kept clean of the blue grass, by the cultivation, once in four years in a hoe crop, and exempted from the noxious weeds, which breed or entice the fly; and if attacked by them, are more able to resist their ravages.

I must here beg the indulgence of the reader, while I endeavor more clearly to show by comparison, the great advantages of the four shift and fallow system, over the three, or any other. This is done, because there are many good and practical farmers in their operations, who are now delving under this worst of all systems, (the three shift) and who from the result of long habit, and a dislike to change a few fences and old standing ditches, are content to labor the remainder of their lives on a poor estate, with a small profit, and hand it down to their posterity in the same impoverished and unprofitable state. There are many instances of this, almost within my view. All that is asked, is a change, a fair trial; and if the result is not satisfactory, then the adviser is willing to sacrifice his judgment. We will suppose a farm of 400 acres, under the four shift system, you would have $\frac{1}{4}$ in corn, $\frac{1}{4}$ in clover, and $\frac{1}{2}$ in wheat; with $\frac{1}{4}$ of your corn land annually manured from the offal of the estate. The crops would be from 5 to 800 barrels of corn. From 3 to 5,000 bushels of wheat, and $\frac{1}{4}$ of the land manured with clover. Under the three shift system, you would have $\frac{1}{3}$ in corn, $\frac{1}{3}$ in wheat, and the remaining $\frac{1}{3}$ in pasture and weeds: for, without the standing pasture, it must be so. Under this system, you would make three or four hundred barrels of corn, 1,000 to 1,500 bushels wheat, and have only about 20 acres of land manured; for the offal of the

estate will not furnish the means of making more. If under this system, the pasture, or rested field, should be sowed in clover, it will be in a measure lost; and almost entirely so, to the wheat crop; which is our staple and important crop. I will here remark, that within my experience, the corn crop is a more certain one when it follows wheat, than when after clover. It is then freed from the worms and other insects, by which the corn is so liable to be destroyed. Under the four shift system, you may in a few years make your estate rich, and at the same time, receive double the profit. Under the other, it must always be kept at a stand or retrograding; for it can never advance in fertility.

The system pursued by Mr. Lewis (of Wyanoke,) is a most beautiful one, and his farm much improved under it, (as any would be under his neat and systematic management;) but there are but few farmers who could be satisfied with so small a return from such an extent of arable land and labor employed. Under that system a farm ought to become rich in a very few years, by not mowing and grazing to such an extent as he does. If the object of the clover lay is the improvement of the soil, (which should be the case, where we have so little demand for hay as a crop,) it would be great economy and saving of labor, to plough it under, and thereby manure a much larger surface—the fodder and other offal of the farm being sufficient for the teams and stock. This, however, may be the most profitable and suitable mode of managing a farm of light soil. One of stiff, by not mowing and grazing to such excess, would in a few years, become as rich as desired. Pursuing this course, you lose entirely the benefit of the clover lay for the wheat crop, which is 50 to 100 per cent. For I am persuaded, if he now makes 20 bushels of wheat to the acre, he would, by having wheat to follow after clover, make 40 or 49. By the way, in answer to one of your queries, why should not this system (the four field) which I have been endeavoring to advocate, be practised on light soils? I assert that it will certainly have this advantage, that the land can be fallowed in almost all seasons, being seldom too wet or too hard, both of which are frequent and serious obstacles with stiff; and a much greater surface can be put in wheat with less labor. The yield may not, perhaps, be as great to the acre; but this is counterbalanced by a larger extent of land with the same, or less labor employed; and that the soil will bear it I have but little question, provided the clover is all secured to the land, especially if assisted with plaster or lime. A portion of the Slurley estate, is of this character of soil, and yields abundantly in wheat; and I think I have heard Mr. Carter say, that it was the most profitable portion of his estate, by yielding good crops of both corn and wheat. Such soils would no doubt be much benefited, as it regards the wheat crop, by being trampled by cattle after the clover has matured, or just previous to being fallowed, or rolled heavily in the spring. I find advantage from such a course, even with stiff land; having frequently observed that such portions of the field as were trodden by cattle produced better wheat; owing, probably, to the clover leaving the land too porous. This, however, should be carefully avoided, until the clover has gotten its full growth, and the blossom begins to die.

The strongest proof within my knowledge, of the rapid improvement under the four field and fallow system, was in the Woods' farm, (a small estate lying in that beautiful neck of land called Curles') but I regret that I am unable to give you a more enlarged account of the improvement of that neck generally; (as I consider it the garden spot of Virginia, in respect to soil.)

In the year 1816, Mr. James M. Selden, took charge of Woods' farm, of 250 acres of arable land, the remaining 300 acres being all swamp land, subject to the inundation of the tides. Previous to his taking charge of the estate, it had been managed by overseers for a great number of years, under this dis-

astrous system of three fields. To those who are acquainted with the character of the soil in the neck, it would be superfluous to say much. I shall therefore, only state, that it possesses all the qualities of our best loam lands, only perhaps, to a greater degree than any other within my knowledge; and probably, would bear this harsh and bad treatment, to a greater extent than most other soils. Under this three field rotation, the crops on this estate were never more than 3 or 400 bushels of wheat; and from 100 to 120 barrels of corn. He at once saw that to persevere in this system of cultivation, was to work for nothing, and finally, to be left in utter poverty, so he resolved on a change to the four field and fallow system. The crops, after the adoption of this change, were in every rotation increased to double, and in a very few years to five or six times the quantity. I will here observe that Mr. James M. Selden, (who was, I think, the best farmer I ever saw,) was the first, who ever introduced the four field and fallow system on James river. Under his very judicious management, this little estate became much improved, and finally, became one of the most productive on the river, or perhaps in the state. I reaped from one hundred acres of this little farm, 2400 bushels of wheat, and the same year made upwards of 500 barrels of corn. A portion of the corn was made on a small piece of reclaimed swamp land, but which never repaid for the trouble and expense, and scarcely ever yielded as much to the acre as the high land. The estate has been kept under this system ever since, and is now capable of producing 30 bushels of wheat to the acre, and from 7 to 10 barrels of corn. The average crops of wheat, for the 6 years I had the management of it, were near 2000 bushels, never having more than half in cultivation, viz. 125 acres.—(This was from 1823 to 1829.) What was more remarkable in the improvement of this state, is, that it never had the advantage of a standing pasture. The cattle of course, derived all their sustenance from the cultivated portion of the estate (or clover field.) If, then, laboring under this disadvantage, (which is a great one,) the improvement has been so great, it would necessarily follow, that it would have been much more rapid with the assistance of a standing pasture. In conclusion, my dear sir, I have only to express my regret that I have not been able, from the pressure of various duties to develop with fullness and accuracy, my humble notions on the cultivation of the soil. Wishing you every possible success in the useful and meritorious Journal you have undertaken the publication of, I subscribe myself,

Your friend and obedient servant,
JOHN A. SELDEN.

(From the Amherst Cabinet)
TO YOUNG HOP GROWERS.

The most common fault with hops at the time of inspection, is their want of strength. In most cases, when hops are marked down by the inspector, the difficulty lies not so much in a bad flavor, as in the want of a sufficient quantity of that aromatic fragrance peculiar to this vegetable, and which is a sure sign of strength and excellence. Hops deficient in strength are, when rubbed in the hand, generally accompanied with a dry, chaffy appearance. The volatile oil, which appears to be the last thing that enters the ovary, (or fruit) and which yields the fine flavor; and without which the hop is good for nothing, is not there in any considerable quantity. This deficiency in oil, and consequent deficiency in strength and smell, may arise from three causes. The first is **PICKING TOO EARLY**, and before the hop is matured or ripe:—Hops picked as soon as they are grown are worth nothing. At that stage, instead of the fruit being saturated with its own volatile oil, as the first sort of hops must be, that oil is only beginning to be elaborated from the sap. The second cause of want of strength arises from **OVERDRYING**. Hops that are perfectly dry and mature, and when picked

from the poles are of the first quality, are sometimes dried to seconds or refuse. I am satisfied of this, for I have seen the operation performed in my own hop-house more than once. I have seen good hops dried until the oil was chiefly expelled, and they would rub into chaff and yield but little fragrance. This may be done without burning them, or a change of color. The third cause of weak hops may sometimes, though I think rarely, arise from **NATURE**. I saw a few bales last year grown by some of our most judicious and experienced planters, which were feeble; yet, in all probability, were picked at the right time and cured in the best style. It in some few cases the deficiency of strength arises from causes beyond the control of man, yet generally the planter need not look beyond himself for the groundwork of seconds and refuse. If hops be killed scantily, care should be taken to shovel over the heap once a day for a few days, and occasionally to examine them down at the bottom. In 1832, hops picked the second week, i. e. after the 10th of September, were better than those of the first week. Hops may be bad also from dirty picking, and various other causes. In brief, take care not to pick too early nor dry too much.

STEPHEN PEABODY.

Milford, Aug. 15, 1832.

(Selected.)
REMARKS ON NEAT CATTLE.

BY MR. MARSHALL.

1. The head small and clean, to lessen the quantity of offal. 2. The neck thin and clean, to lighten the fore-end, as well as to lessen the collar; and make it fit close and easy to the animal in work. 3. The carcass large, the chest deep, and the bosom broad, with the ribs standing out full from the spine; to give strength of frame and constitution, and to allow sufficient room for the intestines within the ribs. 4. The shoulders should be light of bone, and round off at the lower point, that the collar may be easy, but broad, to give strength; and well covered with flesh, for the greater ease of draught, as well as to furnish a desired point in fattening cattle. 5. The back ought to be wide and level throughout; the quarters long; the thighs thin, and standing narrow at the round bone; the udder large when full, but thin and loose when empty, to hold the greater quantity of milk; with large dug-veins to fill it, and long elastic teats for drawing it off with greater ease. 6. The legs (below the knee and hock) straight, and of a middle length; their bones, in general, light and clean from fleshiness, but with joints and sinews of a moderate size, for the purpose of strength and activity. 7. The flesh ought to be mellow in the state of fleshiness, and firm in the state of fatness. 8. The hide mellow, and, of a middle thickness, though, in our author's opinion, this is a point not yet well determined.

Cattle, as well as horses, have been observed to thrive better in salt-marshes than in fresh-water meadows, or upland pastures; and it has been conjectured that the herbs produced by the lands near the sea, are more healthy for herbaceous animals, than such as grow on higher lands. But it is said, that the saline particles with which the earth, as well as its produce near the sea, is strongly impregnated, occasions this beneficial change in the condition of cattle: as these salts purge away the foul humors which the beasts have contracted, either by idleness, or by being overheated in labor. As cattle are naturally fond of salt, and if left at their liberty, will take no more of it than what is conducive to their health, it is recommended to lay common sea salt in the fields, for them, to lick as often as they please.

GREAT YIELD OF POTATOES.—We understand that one of the families of Shakers in this town raised the past season, upon three acres of land, *twelve hundred and fifty bushels of potatoes!* A good comment surely upon their system of husbandry.—*Pitt-field Sun.*

(From the New Brunswick Times)

FALL PLOUGHING.

A gentleman called upon us a few days since, and gave us an account of an experiment he was making the present season, to prove whether spring or fall ploughing of sward land for corn was the most profitable.

He stated that he had a field in which the soil was very uniform; that he ploughed one half of it last fall laying the furrows as flat as possible; the other half he ploughed this spring. In preparing that part which he ploughed in the fall for planting, he had cross-ploughed a part of it breaking up the sod, and a part of it he had prepared by harrowing without disturbing the sod. He had also managed that which was ploughed in the spring, in the same way.

He said, so far, the corn which was planted upon that part of the field which was ploughed in the fall, and prepared by dragging, was more forward and of a better color, than that which was prepared by cross-ploughing; either part of the field ploughed in the fall looked better than that which was ploughed in the spring.

He gave his opinion decidedly in favor of fall ploughing, as being more economical with regard to team work,—that it was more easily cultivated; and that the crops would undoubtedly be better.

HORTICULTURE.

(From the London Horticultural Register.)

ON THE CULTURE OF SWEET AND BITTER HERBS.

With some observations on their Natural History.

HYSSOP (*Hyssopus officinalis*).—This plant receives its name from the Hebrew word *ezob*, but the plant to which the name was originally given is unknown. Some suppose it to have been a kind of moss, and others what we call Winter Savory; but Pliny describes the Savory distinctly, and says the best hyssop grows on Mount Taurus in Cilicia, and that next to that is the hyssop of Pamphylia, both in Asia Minor. The Romans used it with figs as a purgative, and with honey as an emetic; a plaster was formed of it for the sting of serpents. The plant we call hyssop is a native of the south of Europe, whence it was introduced into this country in 1548. Dodoens recommends the use of a decoction of this plant, boiled with figs, rue, and honey, for shortness of breath, hard, dry coughs, and for complaints of the chest. When boiled in vinegar, it is said to be good for the tooth ache. It is also recommended in cases of bruises or falls, either in the form of a poultice, or a little of it bruised, placed in a linen rag and applied to the part. When boiled in water, the vapor arising from it removes ringing in the ears, if introduced into them.

Culture and propagation.—It may be raised by slips, seeds and cuttings. The former should be taken off in March or April, and planted in light sandy soil, in any situation. The seeds should be sown in April, either broadcast or in shallow drills six inches apart; and they should be transplanted out in June and July. Cuttings of the young stalks may be taken in April and May, which, after being planted, will require shading until they have rooted.

LAVENDER, (*Lavandula Spica*). This plant was called by the Greeks *Nardus*, from *Narda*, a city of Syria, near the Euphrates, and *Spica* because it bears its flowers in spikes. There is but little doubt that this is the spikenard of the ancients, of which ointment was made, and which was considered so very precious. Pliny, who flourished shortly after the Christian era, says that the most costly and precious ointment was made from the aromatic leaves of the *Nardus*, and that the spikes (blossoms) sold for 100 denarii per pound, being in our coin about £3. 2s. 6d. He further says that the leaves brought from Syria are

the best, and next to them the Gallic lavender or *nardus* is in estimation. This ointment was usually kept in pots or vessels of alabaster. Some persons, however, have thought that the spikenard ointment of the ancients was made from the root of a species of Valerian, but this seems hardly probable, for the smell of all the species of Valerian is far from being pleasant. It appears to have received the name of Lavender from *lavare* to wash, because it was much used to wash or bathe the body. Both Dodoeus and Gerard recommended those afflicted with palsy or apoplexy to wash themselves with lavender water, or anoint their limbs with the oil made from its flowers. Lavender is an excellent cephalic and nerve. It is also useful to sweeten the air of sick rooms, when the state of the patient or of the atmosphere will not admit of purer circulation. The oil of this plant is often called Oil of Spike. The flowers are said to be amongst the most powerful stimulants to the nervous system, whether applied externally or internally.

Culture and propagation.—It is readily propagated by slips in the same manner as Rosemary. It succeeds best in a dry poor soil, bearing more flowers and having a more powerful odour. The spikes of flowers should be cut when the flowers on the under part begin to drop. Spread them upon a sheet, and every morning and evening let them be exposed to the sun, removing them during mid-day into the shade, and being careful never to expose them to any rains. This process should be continued until they are perfectly dry, and they must then be preserved in paper bags, in the same manner as other aromatic herbs.

MARJORAM. (*Origanum*).—Only two species are usually cultivated in our gardens, the Pot-Marjoram (*O. Onites*.) and the Sweet-Marjoram (*O. Marjorana*.) The former was introduced into this country, from Sicily, in 1759; it grows in abundance in Syracuse, and in some parts of Greece; it gives a pleasant flavor to broths, and was formerly much more used for the purpose than at present. The Sweet Marjoram, called also the *Knotted*, because its flowers are collected in small close heads like knots, is a half-hardy biennial, a native of Portugal, and was introduced here, in 1573. The leaves have a pleasant smell, and a moderately warm aromatic bitter taste. This herb is mixed in food to make it more savoury, to assist digestion, and correct flatulency. It is accounted cephalic, and is useful in nervous complaints; it is regarded as a specific for apoplexy and paralysis, and it was a very celebrated plant in the estimation of Hippocrates.

Culture and propagation.—The Pot-Marjoram is a perennial and propagated by dividing the roots in March or April, which should be planted in a light dry soil, in any situation. The Sweet or Knotted species is treated as an annual; it may either be sown in boxes, in a frame or greenhouse, or on a warm border of light soil, in the open air. The best situation out of doors is under a south wall, or on the border of a stove. The seeds should be sown broadcast, and be very lightly covered. It is sometimes sown on a hotbed, and transplanted into a border in May; and under a hand glass in April, and transplanted when the plants are about three inches high. Judging from our own experience, we recommend that it be sown where it is intended to stand, whether on a hotbed, under a hand glass, in a box, or in the open border, for the plants seldom thrive so well after transplantation. The best time to sow is the beginning of April. Cut and dry them in the shade after the same manner as other herbs.

MARIGOLD. (*Calendula officinalis*).—The name *Calendula* is derived from *Calendæ*, the first of the month, because the plant continues flowering every month from June until October or November, when its life terminates, being only an annual. The flowers are thought to be aperient, (gently purgative) cardiac, (cordial) alexipharmic, (antidote against poison)

and sudorific, (promoting perspiration.) The leaves are also stimulating and gently purgative; they were formerly eaten and relished as a salad, but are now nearly out of use. Dr. James thought the flowers scarcely inferior to saffron. This herb is used in broths, to which it imparts an excellent flavor, but it is much less in demand than formerly. It was introduced into this country, in 1573.

Culture and propagation.—It is propagated by seeds, which are ripened plentifully. These should be sown broadcast in light soil, in March or April. Nothing more is required than to keep them free from weeds. When in full flower, a store may be gathered for winter, and they should be spread out to dry in the same manner as Camomiles. Afterwards pack them in paper bags. If some of the plants be allowed to scatter their seed, they will continue to propagate themselves, without further care than forking or digging the ground, and keeping the plants free from weeds.

MINT. (*Mentha*). This plant derived its name from the fabulous story of Mintha, the daughter of Cocytus, being changed into this plant. The species most in use for culinary purposes is the Spear Mint, (*M. viridis*.) The ancients appear to have used it in great quantities. Pliny says "you will not see a husbandman's board in the country, on which all the meats from one end to the other, are not seasoned with mint." The Romans put it in milk, to prevent it from becoming sour, or from curdling. Those who drank milk took mint with it, lest the milk should coagulate in their stomachs. Spear Mint is a warm stomachic, and is useful in loss of appetite and nausea. An infusion of the dried herb is better than the green, or the extract prepared with rectified spirits. The infusion possesses the whole virtues of the mint, whilst the essential oil and distilled water contain only the aromatic part; and the expressed juice, nothing but the bitterness and astringency, with the mucilage common to all vegetables; all the species of *Mentha*, indeed the whole Natural Order *Labiatae* or Mint Tribe possess a considerable portion of camphor. A conserve made of it is very grateful.

Culture and propagation.—It is usually planted in beds. In the spring, when the young shoots are about an inch and a half or two inches high, take hold of the top of each and draw them up; they will generally have a small portion of root attached to them, and if they have not they will readily grow. Choose a moist situation, where the land is not very strong, and the roots will soon spread over the whole bed. New beds should be replanted, and the old ones be destroyed every five or six years, or at least as often as the beds become exhausted, which may be known by the shoots being short and spindling. **Forcing.**—By this means mint may be obtained all winter and spring. Plant the roots in pots, and place them in a pit or hotbed frame where they can receive a good warmth. The roots may also be thickly planted in a hotbed and covered with about one inch and a half of light soil, which must be kept pretty moist.

Gathering for Winter.—Just before the herb comes into flower, on a fine dry day, tie it in small bunches, which you must hang up in the shade. Always cut the herb as early in the morning as it becomes dry, for in hot weather much of the volatile quality is evaporated in the after part of the day. Some persons consider it better to place the mint in a screen as soon as gathered, and to dry it quickly before a fire, so that it may be powdered, and afterwards put into glass bottles, kept well stoppered.

PEPPERMINT. (*Mentha Piperita*).—This is readily distinguished from the last by its penetrating smell and more pungent glowing taste. It is chiefly cultivated for medical purposes, and for distillation. A rich cordial is made from it, highly esteemed by many persons. This species is said to be an excellent remedy for calculus, for flatulency and hysterical affections. Its culture is similar to the last, requiring a moist soil.

PENNYROYAL. (*Mentha Pulegioides*).—This is also a native of Britain, growing in watery pastures, and places subject to inundations. It was formerly called Pudding grass, from the custom of using it in hogs puddings, which is not now so much practised. The origin of its name is uncertain, the herb was formerly called *Puhall-royall*. Its qualities are similar to the two last being aperient and good for hysterical affections. **Culture.**—Similar to the two last, except that as its stems run on the surface of the bed, and root at every joint that touches the ground, they may be taken off with a knife, and planted in a bed of good loamy soil, in a damp situation.

PARSLEY. (*Apium Petroselinon*).—This is said to be a native of Sardinia, whence it was introduced in 1543. Parsley is a very valuable article for culinary purposes, but it was much more used formerly than at present. Pliny observes, that, in his day, parsley was in great request amongst all classes of people, who took it in large bunches in their pottage. He says there was not a salad or sauce sent to table without it. It was also considered an excellent medicinal herb. Ancient authors tell us, that when fish became sickly in ponds or stews, it was a common practice to throw in parsley, which greatly revived them.

Culture and propagation.—Parsley is propagated by seed, which should be sown in March or April. It remains about six weeks in the earth. The usual method is to sow it in small drills, rather less than an inch deep, and to cover it about half an inch with soil. It is best not to cut it until the plants become strong. There are three sorts cultivated in the garden, viz. Common, Curled-leaved and Hamburg. The former of these has nearly given place to the curled sort, which may be grown to great perfection by careful selection every sowing. One method is when the plants have acquired five or six leaves to take up the best curled, shorten their roots to three or four inches long, and plant them on a bed eight or nine inches apart. In the autumn, make a selection from them, and transplant for seed. When they throw up seed stems, and it is not intended to allow them to seed, cut the whole row off close to the ground, and it will shoot up stocks, and in a regular close growth. To preserve it for seasoning, gather it on a dry day, put it in a tin roasting screen, and place it close to a large fire, till it becomes brittle; then rub it fine, and put it in glass bottles for use.

Hamburg Parsley is chiefly grown for its carrot-shaped root, which is drawn in autumn and winter for table; it may be sown on any dry mold, providing it be deep and not too rich. Thin it to nine inches apart. On the approach of frost, it may be taken up, and like carrots preserved in sand.

(From the Southern Agriculturist.)

ON THE REARING OF THE SILKWORM AND CULTURE OF THE GRAPE VINE.

Dear Sir.—A few years since, several persons in this neighborhood paid some attention to the rearing of silkworms, and even to the manufacture of silk on a small scale. I sometimes met my friends with one or more garments of home-made silk, that would compare well with the imported article. Attention to this business seemed likely, at one time, to become fashionable. Some spoke of making extensive preparations for it, and our Agricultural Society, by way of encouragement, imported the *Morus multicaulis*, which was pretty generally distributed, and grows with great luxuriance in our soil. Such, however, is the difficulty of overcoming inveterate habit, that the rearing of silk could not obtain a permanent foothold in a single family, although its practicability were established by numerous successful attempts. Many individuals on account of its very superior quality compared with the imported, make an abundant supply of sewing silk. This is something gained. I think it is capable of demonstration, that with a good mar-

ket for cocoons, which I am told may be found in Charleston, at all events in Baltimore, small capitalists, with convenient preparations, by no means costly, would find it far more profitable to raise a crop of them than cotton.

I have for a good many years past attended to the cultivation of the vine; and I have good reason, (founded in some experience) to believe, that it may be reared here to advantage. The soil of my vineyard is a stiff red clay, decomposed trap, I plant in large holes about two feet in depth, and fill up with a mixture of loam and sand. In a few instances I have used the scum from the blacksmith's shop, in setting out cuttings, according to the suggestions of Mr. Clarke of Florida. The vines run upon arbors about eight feet high, made of hewn timber or scantling, covered over with long slender pine poles, with the rough bark carefully peeled off. The vines are trimmed close, in the winter months, after the usual method, and so confined to the frames on which they run, as not to be affected by the severest winds. I have never watered nor manured them since they were planted. The hoe is never used except for the removal of grass and weeds. Suckers from the old wood are carefully removed, but the fruit bearing shoots are never topped, nor a leaf intentionally taken off. I have not failed to raise a good crop of Herbermont's Madeira for twelve years. In some seasons I have had them in great abundance, and in the highest perfection. Doud's Madeira has generally succeeded well, but I think a soil of decomposed sand stone or granite, the proper home of this species. The admirable Lenoir overpays me every year for the attention bestowed upon it. It never rots, and always fulfils its promise to the letter. I cultivate several other kinds which answer tolerably, and which are suffered to remain as members of the vineyard *dum bene se gesserint*. I have extirpated the black Hamburg as a cumberer of the ground. This variety, whose origin is uncertain, and which has been so generally reared in the country as the *English grape*, has done more by its numerous frauds upon the vigneron, to call in question the capability of the state for the production of the vine, than all others. The cuttings, however, live without difficulty, and afford excellent stocks to graft on. I have found by experience, that old vines bear more plentifully, and perfect their fruits more certainly than the younger ones. Those who intend to rear the vine, should, therefore, begin early, and exercise patience. The traveller in passing through this part of the country will find here and there some attention paid to the cultivation of the vine, principally for its fruit; not a few are extending their views further. Cuttings are in good demand every spring. The planting of vineyards, and the making of wine are becoming ordinary subjects of conversation. A half dozen successful examples would wake up our people to the enterprise in good earnest. I am somewhat advanced in years, but I entertain hopes of yet living to see the greater part of my neighbors manufacturing an abundance of good wine for family use, and the bad habit of drinking ardent spirits as a common beverage, entirely given up.

Very respectfully, dear sir,
Winneshoe, June 23, 1833. P—.

SILK COCOONS.—Mr. Orrin Tinkhara, of Anson, Me., states in the Maine Farmer, that he found 310 cocoons, after the floss was taken off, to weigh one pound. Estimating the cocoons at the same price per pound as wool, he supposes 1,000,000 worms will produce as many pounds of cocoons as 100 sheep of wool, and at about one third the expense.—*N. York Farmer.*

The odorous matter of flowers is inflammable and arises from an essential oil. When growing in the dark, their odour is diminished, but restored in the light; and it is stronger in sunny climates.

(From the Asiatic Journal.)

THE MELONS OF BOKHARA.

Capt. Burnes, in forwarding to the Horticultural Society some seeds of the celebrated melon of Bokhara, observes:

"From the melons of India we can form no idea of the luscious nature of the fruit as it grows in the plains of Toorkistan, or, as we call it, Tartary. This melon attains a great size, having frequently a circumference of two and a half and 3 feet—those which are reared in winter are much larger, and two of them form a load for a donkey! One has a notion that that which is large cannot be delicate, but no fruit in the world can surpass the melon of Bokhara. Those of India, Cabool, and Persia, not even excepting the well known fruit of Ispahan, do not bear any comparison with it. The pulp of the Bokhara melon is about two inches and a half thick, and retains its flavor to the very skin, which is the criterion of superiority with the inhabitants. So great a quantity of saccharine matter is contained in the melons of Bokhara; that molasses, and consequently sugar, may be readily extracted from them."

RURAL ECONOMY.

MILCH COWS.

The attention of farmers is invited to the consideration of the character and condition of our milch cows.

How much milk had a cow ought to yield to be worth her keeping? What is the average time that our cows are in milk? Is there much, if any, waste of fodder among us by keeping animals that yield little or no return of profit? Questions like these, and there are many such, ought to be put and answered in the New England Farmer. It may turn out that our dairy stock is extremely low in character and its management wasteful.

If something like an average quality of milch cows could be settled—to afford a standard—and it should be understood that no good farmer would keep an animal for milk that fell below it; all the cows in the country would soon come up to that standard and go beyond it.

A milch cow, of *medium quality*, in this state, will give, it is supposed, 12 quarts of milk per day for 2 months after calving, and about 7 quarts per day on grass feed for the next four months, and 4 quarts a day for the next following two months, and perhaps two quarts one month longer. Altogether 1500 quarts in a year.

It takes 9 quarts of milk to give a pound of butter, and 4 quarts to yield a pound of cheese. The skim milk and dairy whey may be valued at \$3 a cow, per annum.

Now, a cow that gives 1500 quarts of milk in a year will produce 166 lbs. of butter, worth at 16 cents per lb. — \$26 56
Skim milk, say — — — — 3 44

30 00
Or 1500 quarts of milk will give, at 4 quarts to the pound of cheese, 375 lbs. which at 8 cents per lb. will be — \$30 00
Whey, say — — — — 3 00

33 00

Nothing is said of the worth of the calf, as all the milk the cow gives is credited. A milch cow's keeping one year cannot be short of 25 dollars in the interior.

Suppose a farmer to resolve that he would keep no cow that did not hold out as a good milker 9 months in the year—and that did not give sixteen quarts of milk per day for 2 months after calving, and 12 quarts per day the next four months—and six quarts per day the next 3 months, and 2 quarts per day the month following. Such a cow would yield per annum 3000 quarts of milk.

Here it may be remarked, that with the addition of 5 dollars per annum to the cost of food as estimated for a common cow, the neat profit would probably be four fold.

Is it not practicable to have throughout the country as common dairy stock, animals as good as the last described?

This question is submitted to farmers for consideration. The probability is, that in taking some pains to get stock as good, they would get even better.

If the various modes of obtaining this object were resorted to at once, and with zeal throughout the country, there would be a prodigious improvement in a very short time. No young animal of promising appearance for milk would go to the butcher.—More care would be taken of young stock. More young stock would be retained to insure a better selection for milch cows. Farmers would think more of the advantages of employing bulls of the improved breed. Heifers would be milked with great care and very thoroughly to get them into the habit of holding out long as milkers. If they once dry early, no care and keeping afterwards will correct this fault. Heifers with the first calf will be fed well, and with some additional care the last three months they are in milk, to make them hold out.

The profit of a milch cow is not generally understood. Milk is not only the most nutritious but the cheapest article of food. The food necessary for a cow in full milk, does not exceed in price, one third of what is necessary in feeding for the butcher.

These few remarks are hastily made to draw out farmers, and particular scientific farmers on this subject. There is a great deal to be said upon it, and a great many facts to the purpose, which should come to light.—*Mass. Agric. Report.*

(From the Rail Road Journal.)

The following article will, we trust, be read with interest, by those who give their attention to the honey-making insect:

A PARASITE OF THE HONEY BEE,

(*Apis mellifica*.)

For a few years past, many of those people, in this vicinity, who have apiaries, have found that in the month of April, May, and June, an unusual mortality had prevailed among their bees. This circumstance has led to a thorough investigation of the cause, by those who have felt a particular interest in the products of this valuable insect; and the result has proved that this mortality has been produced entirely by a parasite.

More than two years since, one of my neighbors suggested to me his conjecture, that there was a parasite fly that was injurious to the honey bee: since which time, we have fully ascertained the fact. I have a box now before me, containing a great number of bees, in which may be found the parasites, in both the pupa and the perfect state. Usually the bees become sickly and unable to fly, when the parasites are in the larva state; but they sometimes live till the perfect insect emerges from the pupa. The larva is fixed at the innosculation of the dorsal segments of the abdomen of the bee, and is hardly discoverable by the eye, unless the abdomen be dissected. The larva is white, nearly two lines in length, and very much resembles a small worm or maggot. The pupa is nearly the size of the larva, and of a reddish brown color. The perfect insect is a nondescript, and bears very little resemblance to the (*Stylops*) or (*Xenos*) or any other insect, that has been found to be a parasite of the bee or wasp. It is of the class Diptera of Lin., is little larger than the Hessian fly, but in color and form it is very unlike that insect.

Kirby, many years since, discovered that the insect (*Stylops*) was a parasite in the black-bronze bee, (*Andrena nigroaenea*), in England, and Professor Peck afterwards found that the (*Xenos*) was a parasite in wasps, in America; but I am not aware that a

parasite of the honey bee has ever been discovered till of late, and in this vicinity.

In conclusion, I would most sincerely request those who have apiaries to examine their hives during the spring and summer months, and if this parasite is discovered, to investigate the history of the insect, and if possible, to find a remedy for the injury it may produce.

MARTIN FIELD.

Fayetteville, Vt. May 15, 1833.

YELLOW WATER IN HORSES.

Take the bark of walnut root, which will not be longer than five or six inches, as much as you can grasp with both your hands, and the same quantity of shoe string roots, thereto add nine quarts of water, boil it down gradually to three pints, give one pint in the morning and a second the next morning, mixing one-third water, this will effect a cure with good nursing; your horse should be kept out of the rain and night air, you must provide his drink at the same time by making a decoction of spice wood and sassafras, and not have it too strong; if this be not duly attended to, for a considerable time they are subject to a relapse. This complaint was prevalent among horses in 1794 to 1798, and in 1795 it was very severe in this state. I know not of other states.

SAVING BACON FROM BUGS AND WORMS.

I never wish to try ashes again, it kills the outside and is worse to wash by far than any thing yet tried. Shelled corn is good and so is wheat bran, but I prefer letting it hang in the house all the time, and when damp or wet weather, make good fires under it, the richer the fire the better, it will make it wash very easy—some might think it a ruination to the bacon, and make it leak—all a mistake, not to the weight of three bugs out of a middling.

MISCELLANEOUS.

(From the Northern Farmer.)

PUBLIC EDUCATION.

Why, has the doctrine so generally prevailed in New England, that farmers and mechanics need no other education than that which may enable them to perform the labor of their respective callings, read their Bible, and perhaps a political newspaper, write their names, keep legible accounts, and when necessary, write a common promissory note?

Why, should farmers voluntarily submit to such degradation? Why, consider themselves as shut out by the nature of their employments, from the privilege of acquiring such a stock of science, and general information, as will elevate them to an equality with the professional classes? Is there any thing degrading in diligent persevering useful labor? Far from it. Nothing more exalts the character of an individual, than self-denial and voluntary hardship; and nothing should more entitle him to the confidence of the community.—Farmers actually hold the political, as well as the physical power of the country; and why do they not exercise it? Why do they permit themselves to be used as the mere instruments of the other classes? The cause of all this may be found in the erroneous sentiments so prevalent among the farmers, that education is not necessary for them: as soon therefore as a farmer's son has received an education he deserts his *caste*, for a profession; and at the present day, most probably leaves a sure independence, to become a mere hanger-on to the skirts of some profession, already too much crowded, (if he should happen to be a conscientious man,) to afford him a livelihood. The time is, we hope, rapidly approaching when a scientific and thorough education will not disqualify a man to be a farmer, or a mechanic. A reform in our schools and colleges is demanded by the very nature of our political institutions. Such a sys-

tem is required by the interests of the nation, that while it affords to the pupil the same instruction in science and morals with the present one, it shall also perfect his physical powers, and render him active, laborious, persevering and efficient. Such should be the character of all our educated men; and such should be the education of all our citizens. This state of things, though yet distant, it is believed, can in no way be so rapidly hastened to its consummation, as by the universal introduction of manual-labor schools, for our sons; for the rich, as well as for the poor; and by giving a thorough, scientific and useful education to our daughters, instead of a trifling and a fashionable one. The following sentiments on public education are copied from the Phil. Lib.

"We have stated that we thought a system of public education which should go no further than the day schools of New England, both unrepudic and utterly inefficient; unrepudic; because children, to lose the follies of aristocratical pretensions on the one hand, and the abject submissions of poverty on the other, must be clothed, fed and treated alike; and inefficient, because half a dozen hours daily schooling will not train a child to be a virtuous, high-minded, cultivated republican; more especially if that schooling be discontinued at eleven or twelve years of age, from the necessities of the parents.

"We now proceed to inquire, whether, in public schools, children ought to be taught something more than abstract science and *book learning*, as it is popularly called; whether children, even while their literary and scientific education is most carefully superintended, may not contribute towards their own support for the present, while they learn some trade or occupation that shall render them independent for the future.

"We are decidedly of opinion, that unless this be done, the system will be very incomplete, and very unnecessarily expensive.

"We, of republican America, have hitherto, in education, as in many other things, followed the example of aristocratical Europe.—We have learned indeed to do without a king, but we have not learned that we can do without an idle, privileged class, to consume the producer's surplus. We still assert, (in practice if not in words) that 'they who think must govern those who toil.' We have discovered that a plain citizen does very well for a president, and that we may dispense with an hereditary succession and with court etiquette, without producing anarchy or revolutionary horrors. But we have yet to learn that the same man can be producer and consumer; the same man be mechanic and legislator, practical farmer and president.

"We have yet to learn, that the world can go on without two classes, one to ride and the other to be ridden; one to roll in the luxuries of life, and the other to struggle with its hardships. We have yet to learn how to amalgamate these classes; to make of man, not fractions of human beings, sometimes mere producing machines, sometimes mere consuming drones, but integral republicans, at once the creators and employers of riches, at once masters and servants, governors and governed.

"How can this most desirable and most republican amalgamation take place? By uniting theory to practice, which has too long been separate. By combining mechanical and agricultural, with literary and scientific instruction. By making every scholar a workman, and every workman a scholar. By associating cultivation and utility, the productive arts and the abstract sciences.

"Such a change would be, in every respect, most beneficial. The roughness and ignorance of the mere laborer would be removed, the pedantry and pretension of the mere scholar rubbed off. The one would not be oppressed by toil, nor the other rendered dyspeptic by continued sedentary employment. The mind would not be cultivated at the expense of the body; nor the body worn down, to the injury and

neglect of the mind. There would be but one class—that of human beings; occupied as human beings ought to be, alternately, in physical labor and in mental culture.

"Let us not say that such an amalgamation is impossible. That would be to declare, that republicanism is impossible. In Europe it was thought impossible for the chief magistrate of a nation (there called a king) to maintain his authority, or make it respectable in the eyes of other nations, except by entrenching himself behind ridiculous court forms, and stiff feudal etiquette. But Jefferson broke the spell. He rode unattended to the hotels of the foreign ambassadors, fastened his horse at the door, transacted the business of the nation as a private individual would the affairs of the family, and left the astonished representatives of royalty in equal admiration of the dignity and courtesy of the man, and wonder at the republican simplicity of the citizen.

"Every man and woman ought to be able when necessity requires, to support themselves by the labor of their hands. It does not follow that all must, at all times, so support themselves; but all should be able to do it. The most highbly aristocrat, if he have but prudence and foresight, will desire for his children this safeguard against want; for who is secure against a reverse of fortune?

"Such a safeguard is afforded, if all children are taught agriculture and gardening, and in addition, some one useful trade or occupation. And, by so useful and republican an addition to the usual branches of education, the expense might be essentially diminished. The labor of the pupils would go towards their support; and thus, even while qualifying themselves to be useful to their country hereafter, they would lighten the public tax for education, in the meantime.

"This is not an untried scheme. It has been tried in Europe, at Mr. Fellenberg's institution, for instance, at Hofwyl in Switzerland, an establishment which is spoken of in the highest terms of approbation by those who have visited it. Several other seminaries have been commenced in this country on a similar principle.

"We conceive, then, that an education is but half an education, scarcely that, unless it makes its pupils productive members of society, as well, as taught school boys; useful, independent citizens, as well as accomplished scholars. And we conceive, that an education thus complete, and much less expensive to the state, than a mere fractional, inefficient one, is a strong additional reason why it is to be preferred and adopted."

(From the New York Farmer.)

THE PROFESSION OF A FARMER.

The North American Magazine, reviewing P. Linsley's address, which we noticed in former numbers of the Farmer, makes the following extract and comments:

"I have long thought that our college graduates often mistake their true path to honor and usefulness, in making choice of a learned profession, instead of converting agriculture into a learned profession, as it ought to be, and thereby obtaining an honest livelihood in the tranquil shades of the country."

In the praise of agriculture he might have gone farther, and extolled it as an occupation at once sublime and useful—which ennobles man, gives peace to his mind, virtue to his heart, placidity to his countenance, and calmness to his passions. Absorbed in the holy contemplation of more but eloquent Nature, or engrossed in the avocations that give sustenance and comfort to his fellow beings, he is equally blessed in the fruit of his labors or the fragrance of his meditations.

Praise is like ambergris; a little whiff of it, and by snatches, is very agreeable; but when a man holds a whole lump of it to your nose, it is a stink, and strikes you down.

Prices Current in New York, November 23.

Beeswax, yellow, 18 a 20. **Cotton**, New Orleans, 15½ a 17; Upland, 13½ a 15½; Alabama, 15½ a 16. **Cotton Bagging**, Hemp, yd. 20 a 22; Flax, 18 a 19. **Flax**, American, 20 a 22. **Flaxseed**, 7 bush. clean, 14.00 a —; rough, 12.75 a 13.00; **Flour**, N. York, bbl. 5.56 a 5.62; Canal, 5.62 a 5.85; Balt. Howard st. 6.25 a —; Rhd'd city mills, 7.00 a —; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per bbl. 16.50 a —; **Grain**, Wheat, North, — a —; Vir. 1.22 a 1.24; Rye, North, .80 a —; Corn, Yel. North, .70 a .74. **Barley**, 72 a —; Oats, South and North, .35 a .40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; **Provisions**, Beef, mess, 8.50 a 9.00; prime, 5.50 a 6.00, cargo, 5.50 a 5.75; Pork, mess, bbl. 16.75 a 17.00 prime, 11.75 a 12.00; Lard, 10½ a 11.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK,

*American Farmer Establishment.***JACK.**

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address

I. I. HITCHCOCK,

American Farmer Establishment.

A good Jenny is wanted by the owner of this Jack.

RAMS AND EWES.

One Ram of last spring's yearning, of the purest Bakewell blood, at \$75.

One do. one and a half year's old, with a defect* at \$50.

Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.

These beautiful and valuable animals, may be had by application to

I. I. HITCHCOCK,

American Farmer Establishment.

*His testicles are always up in his body—in every other respect he is a very fine ram.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

*American Farmer Establishment.***NEW CHINESE MULBERRY.***(Morus Multicaulis.)*

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The pub. is ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK,

*American Farmer Establishment.***DEVON BULL.**

The thorough bred bull Othello, 4 years old last spring, if immediately applied for, will be sold for \$100. Apply to

I. I. HITCHCOCK,

*American Farmer Establishment.***YOUNG HECTOR.**

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK,

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Short-horn, may be had for \$100, from

I. I. HITCHCOCK,

GRASS SEEDS.

Perennial rye grass, at \$1 a bushel.

Poa pratensis (Luztop) for lawns, at 25 cts a quart.

Tall Meadow Oat Grass at \$2 50 a bushel.

For sale at this Establishment, by

I. I. HITCHCOCK.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK,

*American Farmer Establishment.***MILK WHITE TURKIES.**

A few pair of these beautiful fowls, are for sale at this Establishment, at \$5 a pair.

They are equal in every respect to any other known breed, and for beauty far superior.

I. I. HITCHCOCK,

*American Farmer Establishment.***FINE CALVES.**

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Short-horn and half Alderney. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

I. I. HITCHCOCK,

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave **THRASHING MACHINE**, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of **PLOUGHS**, from a small six inch seed Plough, to the largest size three horse Plough, of east and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store **AGRICULTURAL IMPLEMENTS**, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of **GARDEN SEEDS**, suitable for the season, and a small quantity of **ORCHARD GRASS SEED**, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Abanthis or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of **ROSES** and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1891, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; line red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; line yellow, 15.00 a 25.00—Virginia, 4.00 a —.—Kappabannock, 3.00 a 4.00.—Kentucky, 4.00 a 5.00. The inspections of the week comprise 256 bbls. Maryland; 23 bbls. Ohio—total 279 bbls.

Flour.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5 87½ a —; (wagon price, 5.69. a 5.75) city mills, 5.62½ a 5.75; city mills, extra, 6.00 a —.—**CORN MEAL**, per 100 lbs. 1.50 a 1.56.—**GRAIN**, red wheat, 1.15 a 1.18; white do. 1.20 a 1.27.—**CORN**, old yellow, 57 a —; white, 55 a 56—new, yellow, 55 a —; white 53 a 55;—in the ear, 2.50 a — per bbl.; **RYE**, 70 a —; chop rye, per 100 lbs. 1.50 a —.—**OATS**, 33 a 35.—**BEANS**, 1.00 a —.—**PEAS**, red eye, 60 a —; black eye, 75 a —; lady peas, 95 a —.—**CLOVERSEED**, 5.00 a 6.00.—**TIMOTHY**, 2 50 a 3.00.—**ORCHARD GRASS**, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—**Lucerne** 37½ a — lb.—**BARLEY**, — a —.—**FLAXSEED**, 1.50 a 1.62½.—**COTTON**, Va. 14 a 15; Lou. 16 a 18; Alab. 14 a 17; Tenn. 14 a 15; Upland 14 a 15.—**WHISKEY**, bbls. 1st p. 28 a —; in bbls. 29 a 30.—**WOOL**, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—**Unwashed**, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—**HEMP**, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—**Feathers**, 37½ a —.—**Plaster Paris**, per ton, 3 87½ a —; ground, 1.37½ a — bbl.—**Iron**, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28 00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—**Prime Beef** on the hoof, 5.00 a 5.50.—**Oak wood**, 3.25 a 3.75; Hickory, 4.75 a 5.00; Pine, 2.50.

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Editorial, To Rid Wheat Fields of Garlic; The Mail; On the Transmission of Sound. Recipe to Destroy Insects on Trees; Tabular statement of the Cotton Crop—The improvements on the Westover Farm, Va. produced by the Four-shift System, by John A. Selden—Advice to Young Hop Growers—Remarks on Neat Cattle, by Mr. Marshall—Great Yield of Potatoes—On Fall Ploughing—On the Culture of sweet and bitter herbs, with some observations on their Natural History—On the Rearing of the Silkworm and culture of Grape Vine—Silk Cocoons—Scrap—The Melons of Bokhara—On the character and condition of Milch Cows—A Parasite of the Honey Bee—To cure the Yellow water in Horses—How to save Bacon from bugs and worms—On Public Education—The Profession of a Farmer—Scrap—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

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67- DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, 641. Irvine Hitchcock, Baltimore, Md.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, DEC. 6, 1833.

DEVON BEEF.—At a recent public sale of Cattle in this city, Henry Thompson, Esq. sent to the ground, a Devon Cow, not for sale, but merely to exhibit her, in order to illustrate the great aptitude of this breed to fatten. This Cow *had been fed*, otherwise than on the excellent pastures of her owner, but as she had ceased to breed he intended to fatten her for the butcher, the present fall. She had no sooner entered the yard than it was proposed that she should be put up for sale, to which her owner readily consented. Several of our butchers were present and seemed to think this a fine opportunity to treat their customers to a rare bit, and the "Cow ELIZA" was soon *knocked down* to Mr. John Rusk, at EIGHTY DOLLARS, who the following week knocked her down again, and sold her out at an excellent profit no doubt; for *such* beef will always command a price somewhat higher than that of ordinary quality. At our request we have been favored with the following statement of her weight, viz.

Nett Beef,	715 lbs
Tallow & Suet,	156 do
Hide,	71 do
Head & Tongue,	31 do

Total weight, 976 lbs.

This cow was as beautiful as she was otherwise valuable. As above stated, she was only grass fed, her owner having not yet commenced stall feeding her. How valuable must be that breed of cattle which are very cheaply kept—which yield milk and butter in the greatest perfection during their lives—which are always beautiful to look up in; and finally sell to the butcher at such a price as above mentioned! The Devons are as easily profited, as easily and cheaply kept, and in every respect vastly more agreeable, both in their appearance and manners, than the ill-formed, ungrateful, untruth, staving things, called cattle, that overrun and devour pastures for the most part as meagre as themselves, which are incapable of being fattened except at great expense; and even when made fit for the stall will weigh only half as much, and sell in the market at only half the rate: aye, and give those who eat them the dyspepsia into the bargain.

Among the "new inventions" of the day are the two following, which are sufficiently remarkable to merit special notice.

A man in Connecticut has found a way to warm his factory, to any desirable degree, without fuel!—He produces heat by the friction of iron cylinders, which are moved by the power which *actuates* his factory; and the rarified air is carried to any part of the building through pipes. This way of generating warmth for human dwellings is new to us; but we have long been of opinion, that one fire place or furnace is sufficient for the warming of almost any building. Indeed we anticipate, that at a day not distant a good anthracite fire in the basement or cellar of a building will be found sufficient, not only to warm it in either, or all of its apartments at pleasure, but that it shall serve for cooking the food of its inhabitants, and also for manufacturing gas for its illumination at night; and perhaps even the quantity of fuel may be diminished by the use of part of the gas thus generated. We think there will be found little difficulty in supplying any room of a house with both warmth and light, as we now supply our kitchens with water, viz: by the turning of a stop cock.

The other invention or discovery is the use of atmospheric air as a motive power, by reason of its elasticity and compressibility. Recent experiments have proved that this power is very considerable—

Should it be found sufficient for the purposes to which steam is now applied, it would doubtless be a great improvement, on account of its cheapness, plentifulness, and, above all, its greater safety as a mover of vehicles for the conveyance of property and travelers.

Centerville, Queen Ann's county, Md. }
Mr. HITCHCOCK: Nov. 25, 1833. }

I should like to be informed, through the columns of the American Farmer, whether or not there is such an implement now in *successful use*, among farmers, as the grubbing plough. I have often heard of them; but do not know their construction, and have never seen one in operation. If you, or any of your correspondents, can give me any information on this subject, I shall be greatly indebted, (having a great quantity of that most tedious work to do.) My farm has heretofore been tenanted out for a length of time, and has been allowed to grow up in many places in thickets, which I am now trying to clear.

Very respectfully, &c. A SUBSCRIBER.

P. S. I have also a piece of meadow ground to clear, which is thickly covered with alder bushes and swamp or branch willows. I have heard that cutting them down and piling the brush on the roots, and burning after it becomes dry, would destroy them, and therefore supersede the necessity of grubbing. Whether or not this is a fact, I should like also to be informed by some one who has experience. I am sorry to trouble you with so many queries; but from the most accommodating nature of your paper, have presumed thus far.

ON THE USE OF POKEBERRY JUICE.

MR. HITCHCOCK: Brotherton, Md. Nov. 26, 1833.

Sir,—In my communication to you on the 9th inst. I sent you two recipes for publication. Touching the coloring matter for the pickle cabbage, you appended a note to the bottom, by way (I think) interrogatory, in these words: "Could we not dispense with the coloring matter here recommended? The very name of 'pokeberry juice' is rather alarming. It reminds one of certain compounds which are sold under fair and goodly names, as 'L. P. port,' &c. but which make sad havoc in the internal economy of those unhappy mortals who use them."

Having communicated for your inquirist the recipe for red pickle cabbage, and recommended the coloring matter as above, I should have thought there would have been no objection to it. But your note alluded to, I think, will make many persons who are not fully acquainted with the virtues of poke, and consequently its innocency, resort to the apothecary's shop for coloring matter, rather than have this useful ingredient, which may be more costly and far more objectionable.

Country people generally have an opinion with regard to cooking and preparing food, as the late Dr. Rush had with regard to medicines, &c. who said to his professional brethren, that there are indigenous medicines enough in the United States to resort to, rather than distilled liquors, &c. Country people are not fond of resorting to the store and apothecary's shop for such articles as are wanting for family uses, unless they cannot possibly be substituted with others of easier access.

In recommending the pokeberry juice as safe, and not dangerous to the health, I would simply say, that it has been used for that purpose for more than fifteen years in the vicinity in which I reside; and I have never, during that time, heard of a single accident occurring therefrom. My first communication consisted of two recipes for preparing two goodly articles for family use; and in this, carry out the idea and recommend pokeberry juice as not only a first rate coloring matter, but safe. It is used as a medicine by many old persons, who say they derive great benefit from it. Many persons are daily in the habit of using bounce made of whisky and pokeberry juice for

the rheumatism, and find great relief. I knew an old gentleman who never drank ardent spirits, and being subject to rheumatism, used to pluck the berries and eat them, as you would grapes, and labored daily at his trade (a blacksmith) and found great relief.—Poke salad, as the country people term it, is sold in great quantities in the Baltimore market annually, and is eaten with safety: there o.e., if the leaf and stalk of a plant is wholesome, I should think the fruit was not dangerous to health.

While on this subject, I would recommend poke root boiled until it becomes soft, and the water in which it is boiled makes a wash, inferior to none, for a saddle boil, a sun, or sore of any kind a horse may have, having a good healing quality, and is worthy of a trial.

Yours, respectfully, H. W. W.

TO BE TRYED WOOLICE.—Perhaps in cucumber or melon frames nothing is more destructive than woodlice. Confining a toad in the frame or pit is an effectual remedy for the evil, but many persons would think the cure as bad as the disease itself, for they would be unable to eat the produce, from the recollection that the toad might have touched them. One method pursued with success is to make in the soil, close round the edges of the frame, a kind of hollow basin about six inches wide, and to fill this up with short hay to about the thickness of two inches. This, in the course of the first night, will become a place of retreat for them, and at about nine or ten o'clock in the morning, having opened the frame, pour upon this hay, with a wide rose watering-pot, a considerable quantity of boiling water. Then remove the hay and dead woodlice, and place a fresh supply of dry hay. Repeat this operation for two or three days, and you will see no more woodlice. Another system is to sink a pan half full of water in the soil, its rim being level with the surface, then to throw in a few slices of ripe fruit, and place a slate or piece of put over it, leaving only sufficient room for the entrance of the depredators. Examine this every morning, and destroy all such as are found therein. The pan may also be filled with hay and pieces of fruit, such as apricot, &c. being laid in, they will quickly entice these depredators, which on removing you may destroy. Another very effectual method, is to slice the tuberous roots of the Bryony (*brionia dioica*), a well known plant, and very common in our hedges and to put a few of these slices into a common feeder, covering them over with a little moss or short hay and placing them in different parts of the beds. Take out the pans the next morning, and after having removed the moss and baits, cast the woodlice into boiling water.—*Hort. Reg.*

(From the Journal of Agriculture.)

BONE DUST AS MANURE FOR TURNIPS.—Although the quantity of bone dust usually applied to an acre is two quarters, yet one quarter will suffice if mixed with one or two quarters of riddled coal ashes. The bones should be carefully and equally mixed throughout the mass, which will be best effected by frequent turnings with the shovel. To expedite the drying of the ashes, strew a little hot lime while turning the mass. The compost is sown with the usual machine. Turnips raised with this compost of bone dust and ashes, in the quantity alluded to, have been sold for £7 per acre, to be eaten off with sheep. They possess the same characters of a close crop, firm root, and hardness to resist the rigor of winter, as turnips raised with bone dust alone evince. Perhaps peat, or vegetable ashes of any kind, would be equally as beneficial to mix with bone dust as those of coal.

When molasses is used in cooking, it is a prodigious improvement to boil and skim it before you use it. It takes out the unpleasant raw taste, and makes it almost as good as sugar.

AGRICULTURE.

(From the Farmers' Register.)

ON THE CULTIVATION OF INDIAN CORN.

Indian corn is the most valuable crop made in every part of the United States, both on account of the superior qualities of that grain, and of the greater quantities in which it is made. It is remarkable that this plant should grow to such perfection over so many degrees of latitude, and through such various climates. But though every farmer, or tiller of the soil, in our country, is a cultivator of corn, and though it forms the principal crop of most of them, still the proper mode of cultivation is as little known, and the opinions thereon as much disputed, as a most any agricultural question that can be named. Operations the most opposite find advocates and practitioners, and success in the result has been boasted as the proof of the value of every method practised. Deep or shallow ploughing—a ridged or level surface—and various other peculiar practices, have each been considered by some as indispensable, and by others as injurious, to the greatest product of corn. Our ignorance does not arise from the want of instructions in sufficient number; our agricultural publications offer to our choice series of opinions and methods, and in the practices of farmers, we may find a still greater variety. I shall not attempt to point out the best mode of cultivation—but rather to seek it, by inquiring into the causes of this diversity of opinion and practice, and endeavoring to show, and to remove some of the impediments to the forming of a sound theory, and thence deducing correct practice on this subject.

When a man is thrown into a situation altogether different from what he has been acquainted with before—whether from a change of country and climate—of products—or, of his own habits—he, from necessity, yields to his new circumstances, and endeavors to accommodate his habits to them. He loses all the benefit of experience—but he takes *reason* instead, as his guide; and it often happens, that this guide leads to truth and correct practice, more surely than all others. When our English forefathers first began to cultivate the forests of Virginia, they found every thing so entirely different, that they were obliged to abandon all their former practices, and learn anew, from the exercise of judgment and the instruction afforded by necessity. They adopted a mode of cultivation well suited to their new circumstances, in which they showed far more judgment than have their descendants in adhering to the same, after all those circumstances had changed, or disappeared. Under the like necessity, the new settlers of the western states now act, who never think of continuing the practices on the long worn and poor fields, which they left in the land of their birth.

But, in general, farmers do not thus exercise their reason, except under the compulsion of necessity; and when circumstances change gradually and slowly, they do not change their practice in conformity, but cling to their old (and once judicious) practice, until it has become manifestly unprofitable, and absurd, to every one who is not thus *blinded* by the light of experience.

When our forefathers had to plant corn entirely on newly cleared forest land, incumbered with stumps, and filled with roots, they wisely made the tillage very superficial, made but little use of the plough compared to the hoe, and leaped the scanty loose soil in *hills* around the stalks, in preference to a more laborious breaking of the whole surface. The soil being kept open, and in some degree of tilth, by the rotting roots of trees, did not much require more perfect tillage—and for the labor expended, (the land costing nothing,) this was the most economical and most profitable culture. But these habits gradually became fixed; and before the publication of Arator, the general mode of cultivating corn through lower Virginia,

did not vary very much from the old *new ground* practices. Indeed much of it is still remaining every where; and, even after a farmer has adopted a different theory, he will not be able in many years to get his overseers and negroes out of all the old movements.—On a light, clean, and well pulverized soil, we often see a mark made to plant the grains of corn, by a plough suited to make the only furrow through a new cleared soil; and to cover the grains, dropped in the *trough* so opened, three or four strokes of a heavy hand hoe will be applied. If such unnecessary motions are forbidden, the negro will still lose more time in letting them alone, than it would require to perform them. But with most persons there is no disposition to escape from the slavery of old habits. To cause any process to pass unquestioned, it is enough that it has been always performed.

The subjection to old opinions and to experience (as it is called,) is by no means the only bar to improved cultivation. Many have completely shaken off the yoke, and not a few of them have published their new opinions for the guidance of their fellows. Some of these plans have been found to be altogether visionary and unprofitable, and have served to increase the existing prejudice against all changes. Others were founded on correct views, and were judicious and profitable for particular cases; but like quack medicines, each new mode of cultivation has been pronounced by its advocates, as proper under all circumstances; and it is therefore not strange, that more of loss than profit should attend its general adoption. There can be no reason to doubt the value of Taylor's ridge and furrow mode of cultivating corn, on deep, sandy soils, having a level surface, and where wheat was comparatively an unimportant crop—but no more ruinous plan could have been adopted on the thin and poor soils with hilly surface, or on broken wheat lands.

It has been said, that the whole theory of tillage or the objects of agriculture in general, may be expressed in these few directions—keep the soil dry, (or free from superfluous water,) rich, in tilth, (or loose and open,) and clear of weeds. Applying the same to corn, it may be said, that whether the soil be rich or poor, sound theory merely requires that the soil should be dry enough, clean enough, and sufficiently broken and pulverized.—The difficulty is in fixing the degrees of sufficiency, and in varying the means for producing them according to every change of soil and other circumstances. Nothing is more ridiculous than the quackery of giving precise directions for the tillage process of corn, even to prescribing the number of furrows, and the particular implements to cut them, without regard to difference of soil. Yet we have often known the most implicit obedience given, (or attempted to be given) to such rules, and in situations entirely unlike. Even if the best possible mode for cultivating corn, in any one situation, could be discovered, it would require to be varied with every considerable change of soil; and even on the same soil, an alteration of its fertility, and its growth of weeds, might make a particular mode of cultivation good at one time, and very improper ten years after. It is not only that different cultivation is required by sandy, clayey, and stony soils—level and hilly—in a dry or moist climate—infected with indestructible weeds, or free from them—but the succeeding crop, and the general rotation must also be considered. For example—after corn arrives at a certain state of forwardness, it becomes doubtful whether additional ploughing will do more harm, by breaking the roots, or good, by killing weeds and pulverizing the soil. Under this doubt, we who follow corn by wheat, must risk the damage of ploughing, to secure the benefit of having a cleaner seed bed for wheat; and it would be proper to let alone that ploughing; wherever corn was not the preparing crop for winter grain. Again—the blade and top folder of corn are important and indispensable products in Lower and Middle Virginia, but are not much valued in our best grass coun-

tries. In the former case, it is proper to gather the fodder as soon as the grain will bear the operation—and in the latter circumstances, no risk to the grain should be encountered for such an object. For want of knowing when this operation may be safely performed, or for neglect in enforcing what he thought a safe rule, every farmer among us is a yearly loser in grain; and sometimes to an extent not much short of the whole net profit of the fodder harvest.—However, no one has thought of estimating losses of this kind, nor the profits of the fodder crop, because we have been always used to the practice and its losses. We spend from three to four weeks without grudging, in securing our fodder, even when we cannot spare a fourth of the time to cutting hay on our meadows, and leave fields of fine clover to rot, (not intentionally to manure the soil, but for want of time to mow even a small part of them.) We submit, without complaining, and without thinking of seeking relief, to the heaviest burthens that we have been used to, and will not bear the lightest, not already experienced.

I hope that every reader of the Farmers' Register, who can give useful information on this subject, (and there are very many who can,) will do so—and in stating or recommending his plan, that each one will also state on what kind of soil, and under what circumstances it has been found advantageous. It does not follow that a mode of cultivation is admissible only in one situation; but if we are told the precise circumstances under which it succeeded best, we may judge, with something like correctness, what other circumstances will suit as well. Few novices consider that they need this information more than I do, after twenty years of experience as a corn raiser, and nearly as many changes in some part of my mode of cultivation. At one time, and for a continuance of five or six years, I thought that I had fixed on the best kind of tillage—and I still think so, for the circumstances then existing—but later circumstances have compelled me to change my cultivation, and have left me to preach what I no longer practice. This confession is not calculated to attract confidence. Nevertheless I will proceed to describe my plan.

The greater part of my farm was poor, sandy, and hilly—had been much injured in former times by the washing of heavy rains, and still more by the adoption of Taylor's mode of cultivation, although care had been used to direct the ridges and furrows in the best manner to lessen the danger from heavy rains. The injury sustained from this cause was enormous—and with every subsequent care, has not been, and perhaps will never be, entirely remedied. To avoid the washing away of the soil, now became my main object, and that object led to the plan of perfectly flat tillage.

The old practice on my farm, (and which still prevails through a great part of Lower Virginia) was to break up the land so as to leave the surface level—to mark off the distances for planting by rows 42 or five feet apart, running north and south, and crossing them with others at such distance, as left 15 to 20 square feet for each stalk of corn.—Four or five ploughings with a trowel plough were given, first in one direction, and then crossing, ending about three inches deep, and two, and sometimes three *hillings* with the hand-hoe. This heaping up of the earth around the stalk, was done not only to smother the grass, but to support the stalk, and keep it from being levelled by storms, after the ears were formed. According to this plan of cross-ploughing, the furrows were obliged to run down every hill side, and the washing was not much less than upon Taylor's plan. But if impassable gullies were not opened by a single rain, another plough or spade followed across, which filled up, and in a measure, concealed the tract worn by the water. Thus, though there might be as much loss of soil, it was less perceptible; and we were content to be thus reduced *gradually*, from a rich soil, to a barren and naked subsoil.

After abandoning Taylor's system, I introduced by degrees, the cultivation which I shall now describe.

My fields were not grazed, which made them foul, and increased the difficulty of ploughing, although poor. The weeds and grass, however, were nearly all dead above ground in the winter, and there was almost no living turf, or sward.

The field was ploughed flat, and four to five inches deep, in the winter. In the spring, the rows for planting were marked off very accurately 5½ feet apart one way, and across them at 3½ feet.—The seed were planted in the crossings of these furrows, and to insure the greater accuracy of position, very narrow furrows were made. These were marked off, not by a plough and *setting poles*, as is usual, but by a *marker*, made like a horse rake, which made two of the wide rows, or three or four of the narrow ones, at a time. If the land was not soft, and in tolerable tilth, these marks would still need opening and straightening with ploughs; but even if that was necessary, there was much time saved in getting rid of the moving of *setting poles*. After one straight row was made, for the marker across a field, all the others were made by keeping one of the outer wooden pins, (which were 2 by 1 inches at bottom,) in the outside mark, and thus tracing as many new lines, as there were other pins in the marker. The rows cannot be kept as straight as by sighting with poles; but their distance apart is more regular, which is more important.

For the principal tillage, an implement was used which very much resembled the *cultivator*, and which will be called by that name, though there was an important difference. My *cultivators* had 5 teeth; each having 3½ inches of cutting edge, which was like the edge of a broad chisel, set very sloping. The teeth cut so near to each other's tracks, as to leave no unbroken soil or grass between—and their whole spread was 26 or 28 inches. They swept the whole narrow interval between the corn rows, at one stroke, and the wide, at two. When land is in good tilth and clean, this is an admirable implement to keep it so—but altogether unfit for either hard or foul land.

The first running of the cultivator was given (the wide way) as soon as required, after the corn came up—and without any of the usual trouble and loss of time, that occurs when we use a plough. By running shallow, it only smoothed the surface (and nothing more was wanted, as there was no grass then growing,) and moved so little earth, that the young plants were less covered by very close cutting, than by the plough, with the farthest. In about 10 days from this beginning, (which time would be commonly taken to get through,) the second tillage was begun, by running once in the narrow intervals. This required more care, and if any corn had been planted irregularly, the plants would be cut up. The third tillage (wide way) would be finished about the beginning of June—and as it proceeded, the hoes followed to give the very little weeding that this plan required. Of course, for replanting, thinning, &c. the same trouble was necessary as is usual. But the cultivators trimmed so close to the stalks, and very often threw the pulverized earth against them, that there was scarcely any space left for grass to grow on.—When there was any, it was trimmed away by the hoes; but no hoe work was done where there was no grass. I have even left a strip through the field in which no hoe was used, and no hand weeding performed, and did not perceive that the corn looked worse. But very little labor would have been saved by this omission, and some weeds certainly thereby escaped destruction, and must have injured the crop and the land. No hilling was permitted in any case: and I have never found that my corn was, on that account, more subject to be blown down, or broken off, by high winds. When corn is laid prostrate by wind, in its growing state, it will rise again and be erect, except some crook near the root. This prostration never happens unless the earth is saturated with rain; and

then its softness prevents the hill being an obstacle to the falling of the stalk, though it will be to its rising again, by the earth closing around and hardening, before the sun can raise the corn. The breaking of stalks is most apt to happen when the earth is too dry to yield—and the hill may by its resistance, cause the more to break. However, this I am sure of—that no injury has been sustained by ceasing to hill the corn.

The fourth ploughing was given in the early part of June, and was the only deep one. Trowel ploughs were used, running thrice in the narrow intervals, and cutting the earth thoroughly and close to the corn, 4 or 5 inches deep. Sometimes a coulter was used instead, (for experiment,) cutting 7 inches deep, and also going thrice in a row. From this I expected great benefit, by its enabling the earth to absorb so much rain, and preventing after injury from drought; but no difference was seen, and the coultering, being very heavy labor, was abandoned. Afterwards the cultivators again passed over the wide way, making the 5th horsehoeing—and sometimes, where the corn was very small and backward, a sixth was given. The hand hoes again followed the last horse work, and chopped out any grass or young bushes that were found; and there was but little for them to do, if the ploughing had been well executed. If the tillage was more advanced than has been stated, the 4th might be also with the cultivator, and the 5th with the plough; but the last was always given in June, and followed by the last shallow work of the cultivator.

It required a good horse to draw these cultivators; and with such a one, they would go over 6 acres a day. Considering the heavier draught, this was not a very great gain over the ordinary work of a trowel plough, which I have heard stated at 4 acres, in 4½ feet rows. But the latter cuts not much more than half the surface in this case, and leaves four times as much work for the hoes, as is left by the close cutting cultivators. It is impossible that any thing like 4 acres of good work can be done by any single hoed plough, drawn by one horse.

The first running of the cultivator, is on land ploughed perhaps three months before, and with a compact surface. Then it cuts only 1 to 1½ inches deep. The next time deeper—and the third will probably be 3 inches, if there has been no heavy rain to consolidate the earth. If such a rain falls, the field should be ploughed as soon as possible, after drying, for fear of getting hard; which ought not to be permitted, even if an extra tillage is thereby given—(not exceeding, however, the 6 in all.) But, if the soil from neglect is permitted to become hard, or foul with grass, it is in vain to try the cultivators.

I did not perceive that my crops were better than when well tended by trowel hoes, (though no accurate experiment was ever made for comparison)—but I was sure that they were as good, and the labor of cultivation far less. There was also less washing on the slopes, as the surface was kept level enough for the water to flow across the ploughing, (except that in June,) and not be confined to a single deep furrow. But still it was far from being effectual in preserving the soil, as very heavy rains would sometimes sweep off from the most exposed spots, the whole depth loosened by the cultivator.

All my old cleared land was tilled in this manner for four or five years, but I was at last driven from the use of the cultivator entirely, by the concurrence of the several reasons, which I will state.

The whole of my fields have been marled during this time, and their product, on the average, more than doubled, by that and other means of improvement. One ill effect produced by making the soil calcareous, was the general commencement of a growth of either wire-grass, greensward, or blue-grass, over the fields which before were too poor, and unfriendly to their production, to bear either. It was not that any field, or even any large portion of a field, had a turf of such grasses; but small spots of

turf were scattered about, so that the plough would scarcely run 100 yards without meeting with more or less. A close turf of greensward would have been troublesome—but would have been well worth the trouble attending its management. But the little patches of it would be moved along, instead of being turned under by the plough, and remained alive through the winter. The blue grass and wire grass, were still less hurt by ploughing. A second ploughing could not be given to kill grass (for it could not destroy) the spots of turf, without giving it to an hundred times as much clean land that did not require the ploughing, and was even hurt by it, by having the dead vegetable cover brought back to the surface. But whether with one or two deep ploughings before planting, the cultivators were quite ineffectual in these spots of turf, and which were increasing in number and extent every year.

Other objections, which had always existed to the cultivators, but which, when alone, had been submitted to, now hastened my abandoning their use. I have said that great attention was necessary in marking off the rows, and in dropping the grain, and it need not be mentioned that equal care was required in the tillage. Circumstances had withdrawn much of my personal attention from my labor, and of course all these things were worse executed. Again—the making these cultivators required good *oak* and seasoned oak timber, (to prevent splitting,) and a particular bending and inclination of the teeth to the earth, for them to cut well and easily. I had to depend on the mechanics of my neighborhood for all this work, which was badly done, at double prices. Our neighborhood blacksmith was always a hired slave, and during all that time not one of them continued two years together. I had, therefore, every spring to take all the trouble necessary, to show the smith how to make or repair my cultivators, and to pay double price, because his ignorance made him take double time. Though the field work was admirable when well done, and though a good manager could have removed every difficulty, except the turf grasses, yet I gave up these implements, and have since used the old trowel ploughs, which can get through the wire grass, well or ill. This gives 4 or 5 deep ploughings, instead of the former course as described, and a deal more of hand hoeing.

Cross ploughing, has been abandoned, to lessen the washing of the soil by heavy rains; and the direction of the corn rows is suited to the hilly surface, and altered when necessary, so as not to vary very much from a level; though I neither practice nor approve of *horizontal* ploughing, which I have found to be very unsuitable to the hilly land below the falls of the rivers.

My late cultivation, however, has been any thing but systematic, and I am very far from being satisfied with it. But notwithstanding the change of practice, I keep the same theory of tillage in view, and consider sufficient tilth, and sufficient cleanness from weeds, all that is required for the crop. I still avoid hilling, except where it is the cheapest mode to smoothen the grass, instead of weeding it off.

Candor required that I should state my having abandoned a mode of tillage which I recommended to others—and therefore it was necessary to state also, the reasons for that abandonment, which otherwise are certainly not worth consideration. It remains only for me to name the extent to which I believe the flat tillage will be found useful and economical. On all dry sandy soils, not infested with perennial fibrous rooted grasses, it may be relied on entirely; if the surface is undulating, or hilly, so much the greater will be the advantage of adopting this plan. As an auxiliary, it will be advantageous on hilly clay soils, (which however will need more of deep ploughing,) and on level and even bottom lands. As the latter soils would need water-furrows, of course the tillage could be only in one direction.

E. R.

(From the New England Farmer.)

RYE GRASS.

This is a more hearty sort of grass, and will grow on any land; but it thrives best on sour, clayey, and weeping grounds. It neither receives damage from the scorching heats of the summer nor the piercing frosts of winter. It is the best of all winter food for cattle; the shorter it is eaten the better; and it springs earlier than any other. There is no danger of overstocking it; for if it be left to grow too much, the stalk will become hard and sticky. It is best for horses and sheep, and very much prevents the rot in the latter. The best way of sowing it is with clover; and the common quantity of seed is two bushels to the acre; though in some lands where the clover is likely to succeed very well, they sow eight pounds of clover seed and one bushel of rye seed to an acre, and this makes a crop that will last seven or eight years. Some mow it as hay, and thresh it for the seed. If at any time a field of this grass is found to grow thin, it is only necessary to strew on a bushel of the seed, and roll it with a roller; and the plants rising from this addition will make the whole crop sufficiently thick. Rye grass has this peculiar advantage, that it kills weeds without any other sown plant; even thistles cannot grow among it. When rye grass is cut for hay before perfectly ripe, the hay is the better; but the seed will not grow so well. When the seed is newly threshed, it must not be laid too thick; for it is apt to heat, and will therefore be unavoidably spoiled.

AGRICULTURE IN VIRGINIA.

Caroline Co., Va. Nov. 20th, 1833.

To the Editor of the American Farmer:

Dear Sir,—Being a young farmer, I apprehend I shall have nothing either new or valuable to communicate; but your *urgent call* upon your subscribers to contribute something in the way of their experiments in agriculture, induces me to address you. Having located myself in lower Virginia (from circumstances which I could not well control,) a few years since, and upon casting my eyes around, witnessed with deep regret, the destructive and ruinous system of agriculture practised, and the general aspect of the country consequent upon such a system, I became quite dissatisfied, and could I have sold out, would have removed to the rich lands of the west; but since I see such a rapid change for the better in farming generally, and find that by industry and economy, and availing myself of the many natural facilities for improvement which we have in so high a degree, I can quickly change the aspect and product of my own farm, I am constrained to admit that my dissatisfaction has subsided. Looking upon clover and plaster of Paris as the cheapest and quickest mode of improving a large surface of poor land originally good, with the addition of manure to increase and fix that fertility in the soil, I determined to pursue that system, and with me it was the sheet anchor of hope; and having effected a considerable increase in the crops already, I am persuaded it will be only necessary to prosecute it diligently, to quickly bring the land back to its original state of productiveness—which if generally done, would make lower Virginia with its many natural advantages fully equal to any portion of the Union. Being desirous of knowing accurately the difference in the product of the ensuing crop of corn upon a clover lay which had had a half bushel of plaster each year for two years preceding, at the usual time for sowing it and that which had been clovered and not plastered, I had an acre of corn cut off from each and measured, and the result was upwards of five barrels of shelled corn from that acre on which clover and plaster were used, and on the other only rather more than three barrels. That the quantity of vegetable matter was increased at least 200 per cent. by the half bushel of plaster, over that upon which none had been used, was the opinion of every person who saw the experi-

ment. The cultivation of the crop of corn, and the plan I am pursuing to make the land reseed itself with clover, I may probably give you an account of at some leisure time. Hoping success may attend your paper, I am, dear sir, respectfully, &c. W.

(From the Genesee Farmer.)

ON MANURING FALLOW FOR WHEAT.

We are always gratified to obtain the views of practical farmers on any parts of their business, especially where the contributor differs from the common practice around him,—for whether he be right or wrong, if he makes careful experiments he is on the high road to knowledge; and may elicit something valuable from others. It is therefore with pleasure that we lay before our readers, some extracts from our correspondence.

"The result of a series of experiments for more than ten years have satisfied me that a very great error prevails among farmers with regard to the spreading of barn-yard manure preparatory to seeding in the fall with wheat. Many haul it out and leave it lying in heaps for weeks and only spread it immediately before the plough. The best plan is to haul, spread, and plough under in the same day; but this course is impracticable, unless the farmer has more teams and hands than would be profitably employed the rest of the year. The next best course is to haul, and spread off the wagon, or directly after it; and not to suffer the manure to lie in small heaps over night. The custom is to take out all the manure before any is spread. On the contrary, I have pursued my plan for years, and have not seen any difference in the crop, whether the manure had been spread three weeks, or only one day before it was ploughed under.

"After manure is disturbed, and then thrown into heaps, fresh fermentation takes place, which I presume is not the case when it is thinly spread over the ground. I am an unbeliever in the doctrine that the nutritive parts of manure, constituting the food of plants, is exhaled. Some say that after barn-yard manure has laid in heaps for some time, and become dry, it loses its strength. This has been my experience; but never has this loss happened to manure thinly spread over the field as it was hauled from the yard; in other words fermentation is injurious but simple exhalation is not.

"Some may think that spreading manure off a wagon is more tedious than to throw it down in heaps, and then spread it. We mostly spread it directly off the wagon. A man and boy hauled out and spread in this manner eighteen two-horse loads, between ten o'clock in the morning and sunset, which it must be admitted, was good speed. If the time occupied in throwing it down in heaps be added to the time necessary for spreading it afterwards, a balance will be found in favor of my method. This is not idle theory but the result of experiments on a large scale."

(From the Genesee Farmer.)

TURNIP CULTURE.

I am so fully persuaded, from the practice of many years, of the great advantage of the turnip culture to our husbandry, especially the sheep farmer,—and am so anxious to commend it to particular notice—on the sensitive ground of *profit*,—that I venture to give a statement of the expense of culture, of the product and of the estimated profit, of a patch of ruta бага, the crop of which I have just secured for the winter. I do not vaunt of the product. The crop was but an ordinary one. The result will serve to show, that if the culture is profitable upon pine barrens, it may be rendered more so upon the rich lands of the west.

In the last days of June, I gave a good dressing of manure to a sandy ridge, the poorest portion of my farm, from which I had just cut a crop of hay,—ploughed and harrowed the ground, and about the 2d of July, put in the seed of ruta бага with a drill bar-

row. The culture consisted in passing the cultivator through the crop, and in cleaning it with the hoe, twice, and in thinning the plants at the first dressing. The crop has been gathered, and the product found not to vary ten bushels from six hundred. I have to-day ascertained that the ground measures 138 rods, or about seven-eighths of an acre. The roots were generally tailed, as well as topped,* which somewhat reduced the measure; but required very little additional labor, and rendered them more comely and more valuable—for I consider the tap roots rather prejudicial than otherwise to cattle. The following is a liberal estimate of the expense of the crop:

One ploughing, 1 day,	- - - -	\$2.00
Harrowing, 4 day,	- - - -	50
Man 4 day drilling in seed,	- - - -	18
Dressing twice with cultivator, half day each time,	- - - -	1 50
Man 5 days twice cleaning and thinning crop,	- - - -	3 75
Do. 5 days in harvesting and securing crop,	- - - -	3 75

Total expense of labor, - - - - \$11 68
Or something less than two cents the bushel.

But if we add,
20 Loads manure, at 75 cents the load, 15 00

The total cost will amount to, - - - \$26 68
or about four cents the bushel. The value of these roots depends upon circumstances. I have sold them in New-York at 62½ cents. The ordinary price in Albany is 31 cents, and to market men 25 cents. I consider them worth 18 cents for feeding to stock. At this last price the account would stand thus:

600 bushels ruta бага, at 18 cents amounts to \$112 50
And if we deduct expenses of labor and manure, 26 68

We have a nett profit of - - - \$85 82
from one acre of land, in a season, beside a crop of hay, two or three tons of tops, which are excellent for cattle, and one-half of the benefit of the manure to the succeeding crops, none of which are taken into the estimate.

I venture to add some hints, which may be of service to the novice in the culture of the ruta бага.

1. Do not sow after about the first of July—as the crop will not come to full growth.

2. Do not sow upon stiff clayey or wet ground—as such soils are not adapted to turnips.

3. Do not sow the Swede upon poor land, without a good dressing of manure—because this kind is a strong feeder.

4. Do not leave the plants to stand at a less distance than 8 to 12 inches—otherwise the roots will be of diminutive size.

5. Do not bury the roots for the winter without giving ventilation in the crown of the pit—otherwise the air in the pit will become warm and vitiated, and rot them.

J. BUEL.
Albany, Nov. 15 1833.

(From the Bucks County [Pa.] Intelligencer.)

WINTER PLOUGHING.

The editor of the Bucks County (Pa.) Intelligencer, from whose paper the annexed extract is taken, says that "it treats upon a subject which must be interesting to farmers generally. If winter ploughing be an effectual remedy against the ravages of the *wire worm*, it is certainly a valuable discovery, and one which should be made public. Prejudice should occasionally give way to experiment; and if the coming

* An English laborer, who assisted in the harvesting, performed this operation with wonderful expedition and neatness. I think he would pull, tail and top half an acre of heavy crop in a day with ease. He seizes the top and draws the turnip with his left hand, and while he is raising it perpendicularly from the ground, with a small bill-hook in his right hand, strikes off the tap root and then the top with two rapid strokes, and he has hold of another top almost as soon as the root of the first reached the ground.

winter should prove auspicious, it would perhaps be well for those who are troubled with this enemy of the husbandman to try what virtue there is in winter ploughing, and make known the result of such trial for the benefit of others."

Various opinions have prevailed in relation to the most suitable time for breaking up the soil, preparatory to a crop of corn. Those who have respectively selected periods in the fall or spring, have imagined advantages peculiar to each time; and different circumstances of soil and climate may occasionally give a preponderance to one or the other. A sward ploughed down very early in the spring may, when put in order, be as favorable for a crop of corn as when exposed to winter frosts. But I cannot believe that the plan of deferring breaking up the sod to a period immediately preceding the time of planting is a good one; as the soil thus managed cannot be in a suitable state to impart nourishment to the young corn, as the decomposition of the vegetable matter cannot be effected under such circumstances until several weeks after the tender blades make their appearance. It is, therefore, left in a situation peculiarly exposed to the ravages of noxious insects.

Last winter, observing several weeks of open and mild weather, unsuitable for threshing, I ploughed up a stiff sward, in a field which had been infested with the *wire worm* for nearly thirty years. The ravages of this insect had even been so great, that not often more than half a crop had been raised on the field during all this time. The ground was ploughed a good depth, say from eight to ten inches. About the middle of April it was well harrowed, and afterwards ridged. I planted about the first of May; and, from the present prospect, I should think the field would average forty bushels of corn per acre; and no *wire worms* appeared. I know not whether success is to be attributed to the time of ploughing; but it is an experiment which, giving a favorable result in one instance, may induce others to examine into the best means of guarding against this potent enemy to agriculture.

AGRICOLA.

USEFUL TO FARMERS.

The following table shows the number of plants contained in an acre, planted at the several distances specified in the columns marked "feet apart." For example, an acre will contain 10,890 corn hills two feet apart, 2,151 four and a half apart, &c. These numbers are obtained by dividing 43,560, the number of square feet to an acre, by the square of the number of feet, the plants are distant from each other; thus—the square of 2 is 4, and 43,560 divided by 4 gives 10,890, as above. If the plants be set in an oblong form, as five feet by six apart, multiply the two distances together, and divide 43,560 by their product, for the answer. When setting out trees, farmers generally name the distance in yards. In this case, divide 4,840, the square yards in an acre, by the square of distances apart, if they be equal, or by their product if they be unequal, and the quotient will be the number of trees in an acre. For example: at 7 yards apart, an acre contains 98 trees; for the square of 7 is 49, and 4,840 divided by 49 gives 98, the nearest whole number. If the distances be 7 and 10, their product is 70, and 4,840 divided by 70 gives 69 trees.

Feet apart	No. plants	Feet apart	No. plants	Feet apart	No. plants	Feet apart	No. plants
1	43560	1½	19360	2	10890	2½	6969
3	4840	3½	3556	4	2722	4½	2151
5	1742	5½	1110	6	1210	6½	1031
7	889	7½	774	8	681	8½	602
9	537	9½	482	10	435	10½	395
11	360	12	302	13	257	14	222
15	193	16	170	17	150	18	134
19	120	20	108	25	69	30	43
55	85	40	27				

[*Newbern Spectator.*

HORTICULTURE.

(From the Genesee Farmer.)

ON TRANSPLANTING IN AUTUMN.

We have observed that many cultivators are afraid to remove a tree in autumn until the leaves have either dropped or turned yellow; but we can assure them that unless the weather be very dry, they may begin with great safety as soon as the sun has crossed the Line. We have seen cherry trees of good size, in full leaf, and very green,—transplanted exactly at that period, and we have never seen any trees that succeeded better. We would remark however, that they were only removed about thirty rods, and the fibrous roots had no opportunity to wither.

We are satisfied that trees transplanted early in autumn, are likely to do better than such as are removed late in the season. The roots will begin to grow, and to derive that nourishment from the soil, which protects them, if in any degree tender, against the severities of winter; and in all cases where the *spongioses* can be preserved fresh and uninjured,—but more especially where a considerable portion of the earth can be removed with the roots,—the leaves should be carefully retained, so that the elaboration of the sap may continue without interruption.

Where the roots have to remain for any considerable time out of the ground, however, we think it would probably be best to remove the leaves entirely. We once took up a pear tree in autumn, more than a fortnight before the sun crossed the Line, which was wholly deprived of its leaves, and kept about ten days unplanted, without its sustaining the least injury. We supposed it did better from losing its leaves, because the office of these, is to expose the sap to the air and light,—a process which exhales a great quantity of water; and as a constant draft towards the leaves is maintained, and as no corresponding supply can be derived from the roots, we think the effect of the leaves must be partially to exhaust the sap. This reason accords with the practice of some nurserymen who remove the leaves from scions in order to preserve them from withering.

(From Goodsell's Genesee Farmer.)

CULTURE OF SILK.

MR. GOODSSELL: *Adams' Basin, Nov. 12, 1833.*

In giving the result of my experience in the culture of Silk, I do not even hope to enlighten the public upon this subject, in which as a nation we are so much interested, and upon which so much has of late been published, yet hoping my success may encourage others to make the trial, I am induced to comply with your request, and give you the particulars of my experiment, which if you should think worthy of a place in your paper, you are at liberty to publish.

In the spring of 1832, we (I say *we* because Mr. Marcus Adams, a practical agriculturist, is associated with me in the silk experiments) purchased 700 white Mulberry trees of four years growth, and also sowed one pound of Mulberry seed, this turned almost an entire failure, owing I presume to the quality of the seed, as it only produced about fourteen hundred trees from the pound of seed, which should have produced one hundred and sixty thousand.

The trees that we purchased were taken up late in the fall, too late for setting, and were placed in trenches, and the roots covered, where they remained until spring. They were then planted out in orchard form and so tenacious are they of life, that I think, we have not lost in transplanting even in this way, half a dozen of trees. Having become somewhat discouraged by the failure of our Mulberry seed the last year, in May last we procured a few eggs thinking it best, fully to test, and satisfy ourselves as to the practicability of raising the worms, and reeling the silk before we went to further expense. In due time the young worms were produced, but so insignificant was

their appearance that we were more than ever discouraged, and so far was our confidence of success destroyed, that the worms were much neglected, and allowed to go even whole days without feeding, but notwithstanding this neglect they struggled on, and ultimately produced about two hundred cocoons. This gave us a little courage, yet to reel them seemed impossible, and with but little hope of success, we made the attempt and to our astonishment succeeded with little difficulty. Finding it a simple operation even more so than making threads from flax, we finished reeling all our cocoons but such as we designed for producing eggs for the coming season. After the moths had laid their eggs, from our inexperience, we allowed them to remain in a room of common temperature, and about the last of July found a second crop of worms forcing themselves upon us. They were separated from the unhatched eggs, which were then put into a cool cellar, and the young worms placed upon shelves for feeding. They were well attended, and in September produced about fourteen hundred cocoons of superior quality. The specimen of silk left at your office was from this second crop. This crop was fed upon the leaves of the young trees sown in 1832, as above referred to. Thus it appears that a tree one year old from seed will produce leaves sufficient for feeding one worm. This is a very important fact, and clearly proves that the manufacture of silk may be commenced in this section of country much sooner than has been anticipated, and it is not certain but this manner of feeding worms from young trees may be found more economical than from trees planted in orchard form. When it is intended to feed from young seedling trees, it may be necessary to retard the hatching of the eggs a little after the usual time, in order to allow the leaves to get a little start, which may be done by keeping them in a cool place. The worms which were fed from our young trees, were very healthy, and with the exception of a few produced fine cocoons.

That Western New York is capable of producing silk of a superior quality there is no doubt, neither does there appear to be any obstacles to prevent its being performed, in such a manner, as to warrant success, even by those who have not had the benefit of experience, as is demonstrated by the specimen left with you, which was wrought upon the common wheel and reel, by a person who had never before, even seen a cocoon.

That the silk worm is more hardy and subject to fewer diseases, and mishaps, than is generally supposed, the following experiment clearly proves. I placed a few of them before feeding them at all, upon a Mulberry tree in the garden, and left them to take care of themselves, where they withstood several rains, and some very cool nights, and had attained to half their usual size, when they were swept off by a severe storm of wind and rain which destroyed them.

So well are we satisfied with the result of our experiments, and that it is unnecessary to go through with all the routine of first sowing the seed in beds, and then transplanting the trees from the seed bed to the nursery, and from there to the orchard, than to wait for them to become firmly rooted, and to expand their tops, before worms can be fed from them, that we design next spring, to sow another pound of seed, from which we hope to raise from eighty to one hundred thousand trees, from which to feed from until our orchard shall arrive at maturity, and ultimately, to transplant the young trees into hedges, which for large establishments, are no doubt preferable to standard trees, as it facilitates the gathering of leaves, and renders the whole less expensive. We are fully confident that every young seedling tree one year old is capable of furnishing food for one worm or producing one cocoon, if so the greatest obstacle to the immediate introduction of this branch of domestic manufacture, is removed, and instead of waiting many years and incurring heavy expenses in the cultivation of trees before the manufacture of silk can be com-

menced or any returns had from the investment, it requires no more time than is necessary to clear off a piece of land, and obtain a crop of wheat, and we are satisfied that the same labor bestowed will yield a richer harvest. I am, sir, yours, &c.

EDWIN STANLEY.

[The report of a few experiments as above will satisfy our good farmers that there is no more difficulty in manufacturing silk, than wool or flax, and what a proud day will that be for Western New York, where her daughters will appear in silks of their own manufacture—that time we hope is not far distant.—*Ed. Gen. Far.*]

(From the New York Farmer.)

The following is an account of a basket of very beautiful, large and firm cocoons, exhibited at the fair of the American Institute at New York, on the 15th of October last:

COCOONS FROM WORMS FED ON THE CHINESE MULBERRY—*Morus mulicantis*.

The 11th of May, 1834, the worms of the first brood were hatched. They were fed with the *morus multicaulis*, or Chinese mulberry; the litters were changed every second day. As the nights were very cold, the worms did not grow so rapidly as they would otherwise have done; and they required thirty-one days to complete their transient existence.

The egg which produced the worms of the second brood were from those of the former crop.

The 5th of July the second brood of worms hatched. They did not receive any more attention than those of the preceding brood; but the season being more congenial to them, they commenced spinning on the 4th of August.

A third brood might have been readily reared, if it had not occurred that for some time the moths were observed to have pierced their silken cells and to have escaped. Still no butterflies were to be seen. One morning, however, the mystery was solved: on entering the room in which they were kept, a cat was discovered in the act of eating an unfortunate moth; and thus it appeared that Master Grimalkin, who would never have been suspected, was actually the cause of the disappearance of the moths; and, consequently, no eggs could be obtained with which to rear a third brood.

The cocoons reared from the Chinese mulberry have always been of a perfect snowy whiteness, and have possessed all the requisites of a good cocoon.

HORTICULTURAL SOCIETY.

At the November Meeting of the Pennsylvania Horticultural Society, the following letter, accompanying some very fair specimens of the *Long Orange-Carrot*, was received from Mr. Samuel Mason, of Roxborough.

"In consequence of seeing a communication from D. & C. Landreth, addressed to the Horticultural Society, relative to the raising of Carrots, I purchased of them an ounce of seed, and on the 22d day of last 4th month, finished sowing it on a spot of good land, containing fourteen perches, and although the weather proved very unfavorable, being dry and cold, the produce has far exceeded my expectation. I got one row measured (which was not the best) and the quantity raised on the fourteen perches was full seventy bushels, at the rate of eight hundred bushels to the acre. The rows were two feet asunder. I attended them principally with my own hands, with common hoes, and verily believe, that in a favorable season, and on well prepared land, one thousand bushels might be raised on an acre."—*Poulson*.

In striving for the comforts of life, seek those that are least expensive. It is better to have your house furnished with comfortable than with costly things.

DAHLIAS.—This autumnal flower, lately introduced and made a favorite here, has become so much so with English Horticulturists, that they have begun to form societies for the sole purpose of cultivating them. On a late occasion, a party of twenty agreed to frank another party to a Burgundy dinner, if they did not produce the first Dahlias. The bet was lost, the dinner eaten, and the Burgundy decanted. The winners, however, subscribed a sovereign each, to be given in premiums at the next year's exhibition.

[*Poulson's Daily Advertiser*.]

AMERICAN SILK.

The Philadelphia Herald speaks of Mr. Upton, of that city, as having been for eighteen years engaged in silk manufacture. There is a gentleman in this vicinity, (Mr. Cobb, of Dedham,) who, for a shorter period, has perhaps been working as effectively as any other person in the way of experiment. He began the cultivation of the mulberry tree in 1826; and since that time, notwithstanding the nature of the soil, which is not the most favorable, has extended his operations so much as to be now in the habit of bringing to the Boston market American silk manufactured to the amount of about a hundred dollars a week, the year round. Recently he has introduced the great improvement of raising his trees from *slips*, by which he gains two years in the growth. Those planted by him the last spring, we understand, have grown over four feet already. The mulberry, in this particular, excels all other trees.—*Boston Mercantile Journal*.

RURAL ECONOMY.

(From the New England Farmer.)

PREPARATION OF FOOD FOR SWINE AND CATTLE.

It has been observed by an English writer on agriculture, that an apparatus for steaming food for cattle should be considered as a necessary appendage to every arable and dairy farm, of a moderate size. It has been long known that many sorts of roots, and particularly the potato, become much more valuable by undergoing this sort of preparation. And it is equally well known that when thus prepared they have been employed alone as a substitute for hay, and with cut straw both for hay and corn, in the feeding of horses as well as other animals. To a farmer who keeps many horses or cattle, or even swine or poultry, the practice of boiling their food in steam is so great a saving and advantage, that it deserves the most particular attention. Though potatoes have often been given raw to both horses and cattle, they are found to be infinitely preferable, when cooked by steam, as they are thereby rendered much drier, and more nutritive. This has been long since shown by the experiments of Wakefield of Liverpool, who, in order to ascertain it, fed some of his horses on steamed, and some on raw potatoes, and soon found the horses on steamed potatoes had greatly the advantage, in every respect. Those on the steamed potatoes looked perfectly smooth and sleek, while the others were quite rough.

STEAM-BOILER.—This is an implement that no Farmer or Planter should be without, as potatoes particularly, are nearly doubled in value, for feeding and fattening, when boiled. Turnips and other roots, and pumpkins, are also much improved, as food for cattle, by a similar process.

Boiled clover-hay is found very good food for keeping swine, during winter; and we are of opinion, that if fed to milch cows, during that season, it would greatly improve the quantity of their milk, and keep them in better order, than when fed dry to them. We believe this to be well worthy of a fair experiment, by having a vat, or box, to hold the hay sufficiently large for the purpose.

A steam boiler is commonly made by setting a kettle, holding twelve gallons or more, in a furnace, of brick or stone; and over this a hoghead, with one head taken out, and the other bored full of holes, is set so close that the steam of the kettle, when boiling, can only rise through the holes, and thence ascend among the articles to be boiled in the hoghead, and pass off at the top. In this way a hoghead full of potatoes will be nearly as soon boiled, as a small part of them only could have been, if placed in the kettle underneath.

As the kettle must be so closed as to prevent any steam passing off, but through the bottom of the hoghead or vat, a pipe or tube must be set in one side, through which, with the aid of a funnel, the water is to be poured into the kettle, as often as occasion may require. When poured in, the tube is to be stopped, with a plug for the purpose.

Grain of all kinds may be steam-boiled to great advantage, for feeding and fattening cattle; but, in that case, it is requisite to have the bottom of the hoghead covered with a cloth, to prevent the grain running down through the holes.

By experiments which have been accurately made in Pennsylvania, upon Indian corn and potatoes, used for fattening swine, it was found that they increased in weight one-third faster on the boiled, than on the un-boiled food; or, in other words, they gained three pounds when fed on the former, where they only gained two pounds when fed on the latter. We are fully of opinion, that steam-boiling food, for feeding or fattening all sorts of cattle, generally increases the value of the food, as much as forty or fifty per cent.

We are induced to lay this down, as a general rule, that all kinds of food, whether for man, or beast, is more or less improved in its nutritional qualities, by being boiled. This is evidently the case, in regard either to grain or roots; and we believe that every kind of vegetable matter, even green grass itself, will be found much improved, as a food for cattle, when it has been sufficiently subjected to the operation of the steam-boiler. But, whether the additional expense thus incurred, would, in all cases, be found overbalanced by the additional value thus given to the food, must depend on the results of experiments to be fairly and properly made.

(From the New England Farmer.)

RICE MILL AT SOUTH BOSTON.

This is an entire new invention, by some of our Yankee mechanics at Northampton, in this state—Strong, Moody, & Co. It is remarkable that our Carolina friends, should be under obligations to us, for the best means of cleansing Cotton and also Rice. We are induced to say something on this subject, in consequence of a visit to these mills which are just put in operation by JOHN PRICE, Esq. who has purchased the exclusive privilege of using them in this section of the country.

They appear very effective machines for doing the business of hulling and cleansing the rice in a more perfect manner, than any heretofore known. As the method used in all countries is by *pounding*, which breaks much of the grain, and subjects it to become floury, and makes it very liable to insects in warm weather. The process of cleansing the inner coat is by *Carding Machines* in the shape of mill-stones. And the other processes of bolting, brushing and winnowing clean and polish it in the most perfect manner, and make nearly the whole of it *head rice*—consequently we believe it will keep much better and be more valuable.

We know that in *Summer* it is very difficult to obtain good rice, free from weevil and other insects, being uncertain *how long* it has been *bent out*. Here we can go to the mills and buy it from the *hopper*.—We understand it is Mr. Prince's intention to grind some into fine flour, having a set of Burr Stones for that purpose.

This article more particularly since the appearance of the cholera has become more in use than formerly; the physicians recommending it for general use, as a most wholesome food.

The machinery is in considerable variety, and appears ingenious and very perfect, is carried by a neat and powerful steam engine of 20 horse power, made by Mr. Holmes Hunkley, of Boston. A visit to this place, we think will gratify any persons desirous of seeing useful inventions. Mr. Prince's present establishment is expected to clean 4 and 500 bushels of the rough rice or paddy per day—and can, if necessary, be much increased.

The outer coat or hull which is in large proportion, he expects will answer well for making *wrapping paper*—it is now under process for that object, and can be afforded at a very low price.

(From the New England Farmer.)

POTATOES FOOD FOR HORSES.

An Irish writer on husbandry, whose name is Martin Doyle, and whose works were published in Dublin in 1830, has the following remarks:

With respect to potato feeding for horses, I recommend it from an experience of some years. My horses are old (one of them at least 20 years of age,) but they are in high spirits and condition from having every evening after work, excepting during the soiling months [when grass, &c. was cut and carried to them,] an abundant supply of boiled potatoes (warm) regularly given to them, but as the authority of T. C. Curwen, Esq. M. P. of Worlington Hall, Cumberland, is infinitely more valuable than mine on this subject, I shall quote the following passages from his "Agricultural Hints,"

"It requires from 5 to 6 hours for a horse to masticate a stone [14 lbs.] of hay, while he will eat a stone of potatoes in 20 minutes or less. The saving of 4 hours for rest, is alone sufficient to produce the greatest difference in the health and condition of the animal. After great fatigue also a horse would be tempted to take warm food when he would not eat hay. I have at this time in my works, horses which were purchased six years ago of a farmer, who was selling off his stock as worn out, and of little value, and which are yet able to do their work with the best horses I have. I think there is little doubt of the life of this valuable animal being considerably prolonged by this mode of feeding—I have begun to mix an equal quantity of cut straw and potatoes; racks are, according to this mode of feeding as unnecessary as they are productive of waste, for to save trouble they are always filled; and what is not eaten is always so tainted with the breath of the animal as to be wasted." Probably steamed mangold wurzel and other roots would be valuable as food for horses.

(From the Virginia Herald.)

MOLASSES FOR PRESERVING FRUIT.

As Economy is the order of the day, permit me through the medium of your paper to communicate to our ladies, a receipt for preparing molasses for preserving fruit, &c. which renders it much better suited for that purpose, than a syrup prepared from the best loaf sugar, as it is not so liable to candy, nor (if well prepared,) to ferment.

Take 8 lbs. molasses, bright New Orleans, or Sugar House.

8 lbs. pure water.

1 lb. coarsely powdered charcoal.

Boil for 20 minutes, then strain through fine flannel, double—put it again in the kettle with the white of an egg, and boil gently, till it forms a syrup of proper consistence, and strain again. I should not trouble you with the above, but I am satisfied that those who may make the experiment will be so well pleased with it, as to recommend it to their acquaintances generally. Yours, &c. G.

MISCELLANEOUS.

(From the Providence Repub. Herald.)
GO TO WORK THE RIGHT WAY.
Addressed to Farmers.

I am sorry there is so much need of the admonitions I am about to give. Depend upon it, you do not *work it right* or you would make your farms just twice as valuable as they now are. Many of you *farm too much*. You would find it much more profitable to farm twenty acres, well, than forty by halves. The last season I made my grounds produce at the rate of one hundred bushels of Indian corn to the acre. Is this not much better than a common crop of thirty or forty bushels? You will certainly say it is, and with the same breath ask how I manage to make it produce so plentifully? My land being much infested with ground mice, or moles, and overrun with grubs and other vermin, I put on early in the month of March, about seven bushels of salt to the acre, which thoroughly destroys all kind of vermin, being an excellent strong manure, and ploughed and harrowed the ground over and over until it became completely mellow; I then had every corn hole filled with long manure, and after dropping my corn, (which had previously been soaked in warm water,) I scattered a pint of lime over every hill, and then covered the whole with a little mellow earth. In about a week the corn began to come up plentifully, after which I nursed it with the plough and hoe, every other week for eight weeks, at which time it was as high as my head, and not a spire of it was destroyed either by frost, grub, or birds. My other things I manured and equally well, and I have been amply paid for all my extra care and trouble, as I raised more than twice as much per acre as any of my neighbors, and did it in much less time. I mean I got all my harvesting done two or three weeks before many others. This is accomplished in a great measure by redeeming time, rising between three and four o'clock in the morning, then if the day be sultry and hot, I lie by from 12 to 3, and rest, I then feel refreshed and able to work till quite dark. This I call *working it right*, whereas should I lay in bed until the sun be up and shame me, haunt the tavern at night, drink too much whiskey, but half manure, half plough, half plant, half nurse, half harvest, and do every thing by halves, I surely should not *work it right* nor get half a crop.

I shall now conclude by giving you, for further considerations, a few excellent observations, from a wiser head, perhaps than my own, and hope that every brother farmer will do likewise.

"I often say to myself, what a pity it is our farmers *do not work it right*. When I see a man turn his cattle into the road to run at large, and waste their manure during a winter's day, I say that man *does not work it right*. Ten loads of good manure, at least, is lost in a season, by this slovenly practice—and all for what? For nothing indeed but to ruin his farm.

"So, when I see cattle late in the fall and early in the spring, rambling in a meadow or mowing field, pounding the soil and breaking the grass roots, I say to myself, this man *does not work it right*.

"So, when I see a barn-yard with a drain to it, I say this man *does not work it right*, for how easy it is to make a yard hollow, or lowest in the middle to receive the moisture and all the wash of the sides which will thus be kept dry for the cattle. The wash and moisture of the yard mixed with any kind of earth, or putrid raw, is excellent manure, yet how much do not our farmers lose by neglecting these things, in fact they *do not work it right*.

"When I see a farmer, often going to a retailer's store, with a bottle or jug, or lounging about a tavern or wrangling about politics, or quarrelling with and defaming his neighbor's good name, I am certain such a man *does not work it right*." AN OLD FARMER.

(From the Genesee Farmer.)

AGRICULTURAL SCHOOL.

Messrs. Editors:—I read with interest and pleasure the communication of A. M. in your forty-third number, relative to the manual labor school which has recently been established near Bristol, Pa. Every boy that is taught to use his hands in useful labor, promises to add something to the virtue, as well as the wealth of the community. I consider the practice, which is daily extending, of inviting literary students by manual labor, and of inducing into them that true spirit of independence which results from one's consciousness that he can *help himself*, as one of the greatest modern improvements in education.—But I protest against this being called an *agricultural* school. It is professedly a school of theology. The hands may be taught to labor; but where is the intimation that the head is instructed in any one branch of science which is calculated to aid or improve that labor? We have many manual labor schools, but none that I consider agricultural.—many that profess to make agriculture a *practical* study, but none that pretend to make it a *study*, a *paramount* study;—many that employ it as an exercise or recreation, but none that teach it as a business which the pupil is to follow for life, and in which he ought to feel an ambition to excel. One business is all that a boy can be expected to learn well at a time; and if he is destined for the desk or the bar, or expects, as many do, to live on the bread of idleness, I would not give a fig for all the scientific or practical knowledge which he will obtain in agriculture, beyond that obtained by a common laborer on a farm, however his health may be promoted and his mind invigorated by the manly exercises of the field. I commend the school, but dislike the name. Theological school, medical school, and law school, are terms that sufficiently imply the studies which are pursued in them; and young men who go to them for an education do not expect to become farmers; and if they do, they will seldom find the instruction or the teachers that they stand in need of.

An agricultural, like other professional schools, should be devoted to a single object: it should be particularly a school for *farmers*. We should scoff at the pretensions of a surgeon who had never studied anatomy. Geology is the anatomy of agriculture; nor is a knowledge of physiological science less important to the husbandman than to the medical practitioner. I hope yet to see a truly agricultural school established in our country, and in our state. I hope yet to see all the aid and all the light which science can afford given to agricultural labor; and I hope yet to see, especially, our young farmers better qualified, in such a school, for the higher duties of civil life, in order that these onerous burthens may no longer rest exclusively upon the shoulders of the lawyers. U.

The editor of the Novascotian, after registering the weight of sundry turnips—twelve and thirteen pounds—suggests the necessity of improving the breed of sheep, in order that legs of mutton may correspond.

Why is cotton warmer than any other fibrous thread?

Because the fibres of cotton, when examined by the microscope, will be seen to be finely toothed. This explains the cause of their adhering together with greater facility than the fibres of other species which are destitute of teeth, and which cannot be spun into thread without an admixture of cotton.

Why does worsted differ from yarn?

Because separate threads of wool are more twisted for the worsted, of which stockings and stuffs are made, than for the yarn, of which blankets, carpets, &c. are made. Worsted was named from its being originally manufactured in great quantities at Worsted in Norfolk, (Eng.) once a large town, but now reduced to a village; the manufacture being removed to Norwich and its vicinity.

Prices Current in New York, November 30.

Beeswax, yellow, 18 a 20. *Cotton*, New Orleans, 15 a 16½; Upland, 13 a 15; Alabama, 12½ a 14½. *Cotton Bagging*, Hemp, yd. 20 a 22; Flax, 15 a 19. *Flax*, American, 20 a 22. *Flaxseed*, 7 bush clean, 14.00 a —; rough, 12.75 a 13.00; *Flour*, N. York, bbl. 5.56 a 5.62; Canal, 5.65 a 5.88; Balt. Howard st. 6.25 a —; Rhd city mills, 7.00 a —; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, 5.75 a —; Petersburg, 6.00 a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per hhd. 16.50 a —. *Grain*, Wheat, North, — a —; Vir. 1.22 a 1.23; Rye, North, .80 a —; Corn, Yel. North, .70 a .74. *Barley*, .72 a —; Oats, South and North, .35 a .40; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; *Parsons*, Beet, mess, 8.75 a 9.00; prime, 5.50 a 6.10; cargo, 5.50 a 5.75; Pork, mess, bbl. 16.75 a 17.00 prime, 11.75 a 12.00; Lard, 10½ a 11.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK,

*American Farmer Establishment***JACK.**

I have for sale a young Jack, three years old, and of course without an established character as a toad getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address I. I. HITCHCOCK,

American Farmer Establishment.

A good Jenny is wanted by the owner of this Jack.

RAMS AND EWES.

One Ram of last spring's yearling, of the purest Bakewell blood, at \$70.

One do. one and a half year's old, with a defect at \$50.

Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.

These beautiful and valuable animals, may be had by application to

I. I. HITCHCOCK,

American Farmer Establishment.

*His testicles are always up in his body—in every other respect he is a very fine ram.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

*American Farmer Establishment.***NEW CHINESE MULBERRY.***(Morus Multicaulis.)*

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK,

*American Farmer Establishment.***DEVON BULL.**

The thorough bred bull Otello, 4 years old last spring, if immediately applied for, will be sold for \$100. Apply to

I. I. HITCHCOCK,

*American Farmer Establishment.***YOUNG HECTOR.**

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK.

GRASS SEEDS.

Perennial rye grass, at \$1 a bushel.
Poa pratensis (luztop) for lawns, at 25 cts a quart.
Tall Meadow Oat Grass at \$2.50 a bushel.

For sale at this Establishment, by
I. I. HITCHCOCK.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK,

*American Farmer Establishment***MILK WHITE TURKIES.**

A few pair of these beautiful fowls, are for sale at this Establishment, at \$5 a pair.

They are equal in every respect to any other known breed, and for beauty far superior.

I. I. HITCHCOCK,

*American Farmer Establishment.***FINE CALVES.**

For sale, a pair of twin bull calves, got by Bolivar out of a cow half Durham Shorthorn and half Alderney. They are very large and fine animals and will be sold together or separately for \$50 each. Apply to

I. I. HITCHCOCK,

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRASHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Thrashing Machine they have ever seen. I can furnish a number of these Thrashing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00—Virginia, 4.00 a —Rappahannock, 3.00 a 4.00.—Kentucky, 4.00 a 5.00. The inspections of the week comprise 334 hhd. Maryland; 51 hhd. Ohio 22 hhd. and Virginia—total 387 hhd.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5.87½ a —; (wagon price, 5.69, a 5.75) city mills, 5.62½ a 5.75; city mills, extra, 6.00 a —. **CORN MEAL**, per 100 lbs. 1.50 a 1.56.—**GRAIN**, red wheat, 1.15 a 1.18; white do 1.20 a 1.25.—**CORN**, old yellow, 52 a —; white, 52 a ——new, yellow, 52 a —; white 51 a —; in the ear, 2.50 a — per bbl.; Rye, 70 a —; chop rye, per 100 lbs. 1.50 a —.—**OATS**, 35 a 36.—**BEANS**, 1.00 a —.—**PEAS**, red eye, 60 a —; black eye, 75 a —; lady peas, 95 a —.—**CLOVERSEED**, 5.00 a 6.00.—**TIMOTHY**, 2.50 a 3.00.—**ORCHARD GRASS**, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —; Lucerne 37½ a — lb.—**BARLEY**, — a —.—**FLAXSEED**, 1.50 a 1.62½.—**COTTON**, Va. 13½ a 14½; Lou. 15 a 17; Ala. 14 a 16; Tenn. 13½ a 14½; Upland 14 a 16.—**WHEAT**, hhd. 1st p. 28 a —; in hhd. 29 a 30.—**WOOL**, Washed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—**Unwashed**, Prime or Saxony Fleeced, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 21 a 24.—**HEMP**, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—**Feathers**, 37½ a —.—**Plaster Paris**, per ton, 3.87½ a —; ground, 1.37½ a — bbl.—**Iron**, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 25.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—**Prime Beef** on the hoof, 5.00 a 5.50.—**Oak wood**, 3.25 a 3.50; Hickory, 4.25 a 4.50; Pine, 2.50.

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Editorial, Devon Beef, its value for the Shambles; New Inventions—Inquiry as to the Grubbing plough—On the use of Pokeberry Juice—To Destroy Wood lice—Bone Dust as a Manure for Turnips—On the Cultivation of Indian Corn—On the value of Rye Grass—On the use of Clover and Plaster in Improving Land—On Manuring Fallows for Wheat—Turnip Culture, statement of its profit—On Winter Ploughing—Table shewing the number of plants contained in an acre—On Transplanting in Autumn—Culture of Silk in New York—Cocoons from Worms fed on the Chinese Mulberry—Meeting of the Pennsylvania Horticultural Society—Serap—Dabbas become a great favorite in England—American Silk—On the preparation of food for cattle and swine, and the construction of a steam-boiler—New Invention of a Rice Mill at South Boston—Value of Potatoes as food for Horses—Molasses for Preserving Fruit—Go to Work the right way—On Agricultural Schools—Serap—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

GENERAL.**Agricultural and Horticultural Establishment:****COMPRISING,**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore; in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

67—An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, DEC. 13, 1833.

MORUS MULTICAULIS.—*New Chinese Mulberry.* This variety of mulberry continues to attract the attention of foreign silk cultivators, and must soon exclude all other varieties from use. As we are gradually becoming a silk producing people, it is of the utmost importance that our mulberry orchards should be commenced with the best varieties, because it will cost no more to plant an orchard with the best, than it will to set out the very worst. But it is quite another thing, after all the expense of money and time has been incurred in planting the white mulberry, to be obliged to dig them all up and replace them with the one which shall then be found indispensable to profit. That this will be the case with all who are now planting any of the old varieties, we have no doubt; for the *Morus Multicaulis* is so much better adapted to the feeding of silkworms, and those who possess it will be able to make silk so much cheaper than those who use any other kind, that they will be able to monopolize the market—or at least compel those who use the latter to sell silk at a loss and thereby compel them to adopt the new kind or quit the business. Our readers may be assured of the sincerity of these remarks, and we entreat them not only for their own sakes, but for the sake of the cause of American silk culture itself, to give them due attention. Europe, with its cheap labor and the assistance of this new variety of mulberry, will be able to undersell us, and thereby contend successfully with our more favored climate and more intelligent and skillful people. To enable us therefore, to meet her in the market upon, at least, equal terms, we must avail of all the means in our power; and at this time the *Morus Multicaulis* is the most important, and should not be neglected. In the end, it is the cheapest variety for an orchard, because its extreme facility of propagation renders it capable of being multiplied ten-fold at least every year. Its rapid growth is another high recommendation. The writer of this, has gathered ripe fruit from a tree only *thirteen months old*, and has at this time a tree growing from seed ripened at that time. Any person may make an orchard as large as he can desire in three years, by planting twenty or thirty trees, and laying them or planting cuttings from them. The leaves contain a much larger quantity of nutritive matter than those of the white, or any other variety, and consequently, one pound of them will produce a much larger quantity of silk. The leaves are also so large that one half, at least, of the expense of gathering is saved—one leaf of *morus multicaulis*, being equal to at least a dozen of the white variety. We have thought it our duty to call public attention to this subject once more, as it is all important in all new beginnings, with individuals or nations, to take such a start as not to be obliged to turn back and begin again.

HORTICULTURAL SOCIETY OF MARYLAND.—We are gratified to learn, that this association is going on with renewed vigor in its career of usefulness, and we have reason to hope that ere long, our community will experience very sensibly, the benefits which have been expected to result from its formation. This is well; the horticultural associations of the United States, have already taken a high stand; their exhibitions and fairs during the past summer and fall, have excited the admiration and elicited the applause of the thousands who were present on those interesting occasions; and even national pride has been forced to give way and yield a just tribute of praise to the enterprise and skill of American gardeners. "Every thing with Americans," says an English writer, speaking of the progress of horticulture among us, "is gigantic, like their coun-

try." Our friends of the Horticultural Society of Maryland, will see the necessity of keeping a "bright look out" lest the good people "down east," carry off all the glory.

We will endeavor, in future, to lay before our readers, a statement of the proceedings of the society at its monthly stated meetings.

Dr. Wm. Fisher has been elected Corresponding Secretary, *vice* H. P. Dickhut, resigned.

Gideon B. Smith, Esq. elected a member of the Council, to fill the vacancy occasioned by the election of Dr. Fisher to the office of Corresponding Secretary.

P. Barrett and Michael S. Norman, were elected members of the society.

A communication from Genl. H. A. S. Dearborn, President of the Massachusetts Horticultural Society, with a present of some *Manilla Tobacco* seed, was laid before the society. The thanks of the society were voted to the donor and the seed was directed to be distributed among the planters of the state of Maryland.

Specimens were exhibited of *Eucynus purpurea* and fruit of *Punica granatum*, *P. alba*; or white flowering pomegranate. The latter was a beautiful specimen, and the first (to the knowledge of the society) which has been brought to perfection in this country—From Mr. John Feast.

Dr. J. I. Cohen, presented in the name of Dr. Wood of the U. S. Navy, specimens of *Theobroma Cacao* and *Anacardium occidentale*.

Specimens of *Psidium pyrifolium*, Guava of the West Indies, bearing fruit and *Arbutus unedo*—by Mr. Samuel Feast.

The society has taken a room in the Patapsco Building, where a committee of the Council will meet every Saturday morning at 9 o'clock, "to receive and inspect articles and objects offered for competition for the society's premiums."

We cordially unite with the secretary of the society, in inviting "ladies and gentlemen, friendly to the object of the society to become members."

Our country friends will please take notice that the association is not confined to Baltimore, it is the "Horticultural Society of MARYLAND."

Margaretta, York county, Pa. }

December 9, 1833. }

MR. HITCHCOCK:

In the last number of the Farmer, a subscriber enquires, "whether or not there is such an implement now in successful use, among farmers, as the Grubbing Plough." This is an implement of husbandry I have never seen, therefore, the object of the present communication is not to recommend any new invention of the kind, but to inform your correspondent of the manner in which I cleared a piece of ground, which was grown up with bushes and undergrowth of various sizes from three to ten feet high: it was with a pair of oxen and a chain of ten or twelve feet long, with one end attached to the yoke, and forming a noose with the other around as many of the sprouts as could be encompassed by it, which when thus made fast, they drew out by the roots with great ease, it was in the spring while the ground was yet loose, it is probable the operation would not be so easy when the ground is dry and hard. Two active boys of fifteen years of age, will clear more ground in this way, than ten men will grub out in the ordinary method with mattocks. I do not think that the plan suggested for destroying the willow and alder, will entirely destroy the roots, and so long as any part remains, they will be liable to sprout again. Yours, H. Y. S.

Linnaeus has remarked, that the Cow eats 276 species of plants, and rejects 218; the Goat eats 419 and rejects 126; the sheep eats 387 and rejects 141; the Horse eats 262, and rejects 212; and the Hog, more nice in its taste than any of these, eats but 72 plants and rejects all the rest.—*Dick's Diffusion of Useful Knowledge*, &c.

A subscriber asks us for the best method of cultivating the Castor Oil Bean—Will any of our friends answer?

AN IDEA.—A French author speaking of the relative condition of Great Britain and Ireland, says, that "the larger island has devoured the smaller one but has never been able to digest it."

SUGAR.—This is the most nourishing substance in nature. It affords more nutriment than meat. It enters into the composition of most vegetables, and abounds in the beet, melon, apple, and others which are the most palatable. It seems requisite for the sustenance of animal life, and sailors who are compelled to subsist only on salted meats, without vegetables, are afflicted with disease. Crews of vessels subsist on it during times of scarcity, and in such cases it has cured the scurvy. The first settlers of this country, in order to obtain it, used to boil up the chips of the walnut trees which they had cut down. The Indians on their long journeys prefer it to any other food, because it will not corrupt, and they mix it liberally with their powdered Indian corn. The juice of the sugar cane is so pleasant and nourishing that all persons at the south employ it. The healthy negroes become robust, and the feeble recover their health by its use. Cattle to whom the tops are given grow fat, horses thrive upon it, while hogs fatten upon the refuse. Loaf sugar, the finest of all sugars, is frequently ordered by physicians as a nutritious substance and we have known individuals, who, like Cassius had "a lean and hungry look," to correct their habits by the use of sweet articles, and become corpulent and healthy.—*Traveller*.

Unprecedented Feat of Manual Labor.—At the dinner after the Ploughing Match which took place at Birch, in this county, last Easter Monday, the subject of manual labor was introduced. Several extraordinary performances were mentioned in the several departments of ploughing, reaping, mowing, &c., when Mr. John Hutley, of Rivenhall, betted Mr. Lungley, of Kelvedon, two sovereigns, that he could produce a laborer in his employ who could fill 40 carts or tumbrils of fair rotten muck in 12 hours; each cart to contain forty imperial bushels, heaped after the manner of coal; to clear the bottom of the muck heap, and to perform the same in a workmanlike manner. Tuesday the 24th ult., was appointed to decide the wager. Two umpires were appointed, when John Pease, of Cressing, began to perform his herculean task; and, to the astonishment of those present, he filled his forty carts, or 1600 bushels, in the short time of seven hours and twenty-five minutes, without much apparent fatigue. The first fourteen loads he filled in two hours and two minutes; he took refreshment three times, resting about ten minutes on each occasion—so that he actually filled the forty loads within seven hours. The manure thus filled was not in the best state; it was not sufficiently rotten to spit or dig well. The usual number of loads allotted for a laborer to fill in a day is fifteen only of the same sized carts. The successful laborer received a sovereign, and a handsome subscription from the spectators.—*Essex Herald*.

DYSPEPSIA.—An old lady of our acquaintance in a town in Hampshire county, who was apt to be troubled in her dreams, and rather superstitious withal, informed the parson of the parish, that on the night previous she dreamed she saw her grandfather who had been dead for ten years. The clergyman asked her what she had been eating. "Oh, only a half of a mince pie!" "Well," says he, "if you had devoured the other half you might probably have seen your grandmother."—*Amaranth*.

AGRICULTURE.

(From Nicholson's Farmer's Assistant.)
EARTHS.

Chemists, by analyzing the substance which forms this earth, find it to contain several distinct kinds of matter, which they denominate primitive earths; which are, however, unnecessary to be designated here, farther than as some of them enter into the composition of soils. These are principally lime, magnesia, silice, and alumine. In addition to these, other substances are found in soils; such as animal and vegetable matter in a decomposing state, certain saline compounds, and the oxide of iron.

Lime is seldom found in its purity; but is generally combined with other earths, and with acids. What are commonly called limestone, marble, chalk, and the different kinds of marle, are all mixtures of lime with other earths, combined with carbonic acid, and are each called carbonates of lime.

Gypsum, or sulphate of lime, is a mixture of lime with other earths, combined with sulphuric acid; and when lime is combined with phosphoric acid, it is called phosphate of lime.

Lime, in its pure state, is infusible; but is readily dissolved in acids, or in six hundred and eighty times its weight of water. When either of the above-mentioned acids is poured on any stone, or earth, which contains lime, an effervescence will take place, by which the presence of this earth may always be discovered.

Limestone, gypsum, marble, &c. are generally found the uppermost of the stony incrustations of this globe; and appear generally to have been formed, before the dry lands appeared. Chemists suppose them to be principally formed from shells, such as those with which many parts of the bottom of the ocean now abound, in prodigious quantities; and the skeletons of fishes, and other aquatics, often found in these masses, would in some measure seem to confirm this opinion.

Some of the stone, commonly called limestone, is combined with a large proportion of magnesia; of which earth we shall speak presently. Sometimes, also, limestone is principally combined with argillaceous, and sometimes with silicious, earth; the former being known by its hardness, and smoothness of surface when broken, and is the least calculated to improve a clay soil; the latter being distinguished by being more soft, and rough, when broken, and is best adapted for clays.

Marble is usually combined with argillaceous earth, and chalk is formed of nearly the same ingredients; but, perhaps, contains less alumine.

The upland marle is generally a clay, with a certain proportion of lime, and the more the better, as a manure. Sometimes, however, this kind of marle has a considerable proportion of sand; in which case, it may be found best adapted for clay soils; as, in the former case, it will be found most suitable for those which are sandy. The marle of bog-swamps also varies in its proportions of a fine rich clay, or loam, and of very fine sand; but, in all cases, contains more lime; and, the weaker sorts, probably, more earth formed of vegetable matter.

There are also calcareous sands, which may be easily discovered by applying any of the acids to them, in the manner before directed. Sometimes, also, these sands are mixed with silice.

Magnesia is a white, friable, light earth, usually combined with other substances, and sometimes with limestone. When this is the case, the stone, when burned, makes what the English Farmers call hot lime, and, in Great Britain, is esteemed of much less value, as a manure; but, in this country, it is said to be most valuable.

The Magnesian limestone may be known, from that which is purely calcareous, by the slowness of its so-

lution in acids; as, even the softest kind of it, is longer in dissolving than marble. Frequently it has, also, a crystallized structure; and sometimes small black dots may be seen interspersed throughout the mass.

Silex, or the earth of flints, is exhibited mostly in the form of crystalline sand.

Alumine is the basis of clay, and serves to endue that earth with the peculiar characteristic of contracting in bulk, when dried; and of expanding again, when moistened.

Animal matter, in a decomposing state, must be principally the remains of the various insects, and other animals, which have existed, and perished, in the earth, during the lapse of ages.

The presence of the remains of animal matter, in earths, is ascertained by applying a strong heat to them; under the operation of which they emit a smell similar to that of feathers when burning, and leave a residue which is principally carbonaceous matter, together with carbonic acid, volatile alkali, and inflammable acriform products.

Vegetable matter, in a decomposing state, is much more apparent in almost every part of the surface of the earth; but most so in rich moulds, and in new lands, where the surface is usually more or less covered with it. It forms the upper stratum of bog-meadows, and indeed the whole mass, where they are not underlaid with marle. When it undergoes the operation of a strong heat, the residue is mostly ashes.

The saline compounds found in earths, or soils, are but rarely to be discovered, and are principally common salt (muriate of soda) epsom salt (sulphate of magnesia) and the salts chemically called muriate, and sulphate, of potash, nitrate of lime, and the mild alkalies.

Soils containing the least of any particular saline ingredient, that forms a part of the food of plants, will probably always be found most benefited by the application of that kind of salt, as a manure.

The oxide (rust) of iron is found in all earths, or soils; but mostly in yellow and reddish clays, and in sands of similar colors. It would seem that the colors of these earths are mostly owing to their containing more or less of this oxide; and that, for this reason, they are usually the least fertile; as the presence of iron, in any shape whatever, in the soil, is unfriendly to vegetation.

But reddish-colored earths are often very prolific; particularly of the loamy kinds, the cause of which may be, the presence of other fertilizing matter in the soil, that over-balances the effects of the iron; or, that the color is chiefly owing to some other cause.

When earths have been made as dry as they can be, by exposure to the air, they still contain a considerable quantity of water; the more clayey kinds containing about a fourth of their weight; while those which are light and sandy hold from a tenth to a twentieth part only of this fluid, according as the sand predominates more or less.

It would seem that this circumstance is principally what gives to clayey soils the advantage over those which are light and sandy; the former, holding more water, are enabled to impart to the growing plants more of this necessary food than the latter, particularly during spells of dry weather. The stiff and clayey soils may therefore be said, on this account, if on no other, to contain more of the food of plants than the light sandy ones.

But clays may, nevertheless, be too solid and compact to admit the extension of the roots of plants in search of this food; and, in such case, the stores of this nutriment are only to be unlocked by the application of sand, or some other substance calculated to destroy the quality of compactness and adhesion in the soil.

Something shall now be said of earths, in regard to their forming different soils.

There are a variety of these; such as the sandy, gravelly, loamy, clayey, marly, chalky, mucky, turf, and

peat soils. There are also soils formed of a mixture of some of these; such as the sandy-loam, gravelly-loam, sandy-clay, gravelly-clay, &c.

The sandy soil is that in which sand predominates; but which at the same time, contains a sufficiency of other earthy matter to make it more or less retentive of moisture, and thus becomes endued with various degrees of fertility. A pure sand is wholly barren; being nothing more than a collection of very minute pebbles, which are usually of the stone we call flint; though sometimes they are of calcareous stone, as we have before mentioned.

Where a sandy soil is underlaid, and at no great depth, with what is usually called a hard pan, it adds greatly to the retentiveness of the soil, and of course to its fertility.

Sandy soils are usually of a yellowish, or reddish, cast. Sometimes they are grayish; and frequently they are dark colored. The latter are usually the most fertile: Generally they are very productive; the yellowish and redish are commonly the least so; and the grayish usually holds a middle station between the two extremes.

Sandy soils are, commonly, most profitable in the cultivation of roots of almost every description; particularly when the soil is well manured, if it be not naturally rich.

Wheat is not very natural to this soil; but, when in good condition, it will produce tolerably good crops of this grain; particularly when sown on a sward of clover turned under. Rye is natural to this soil.

The lighter kinds of it are too little retentive of moisture, during the heats of summer, for good crops of Indian corn; though those which are darker-colored are generally very good for this crop.

Some particular kinds of grass grow well in this soil, even where it is very light and dry.

Sandy soils have this particular advantage; they are easily tilled; so that, if what is saved in tillage be expended in additional manurings, it is doubtful whether this soil, when skilfully managed, will not be found as profitable to the Farmer as most other lands of middling quality.

Sandy lands are also much pleasanter to till, than most other soils; so that, if pleasure be an object with the Farmer, he will bring that into the account, when forming a proper estimate of the value of this soil.

A great proportion of the vast and populous empire of China is said to be more or less of sandy soil.

The county of Norfolk, in Great Britain, which is said to be now among the most productive tracts in that country, was, originally, for the most part, a poor light sand.

In this country, sandy lands have generally been too little valued: They have been mostly occupied by poor farmers, who have taken no pains, in the first instance to give them more stamina, and thus fit them for profitable courses of crops; but, on the contrary what little fertility they possessed has usually been exhausted in the production of poor crops, and thus the soil has at length, in many instances, become almost entirely barren.

The gravelly soil is that in which gravel forms the largest component part. Pure gravel, like pure sand, is barren; being nothing more than a collection of pebbles, of a larger kind than those of which sand is composed. A coarse sand, and a fine gravel, may be considered so nearly synonymous, that we will not pretend to draw the line of distinction between them.

Of the different kinds of stony matter which form the gravelly ingredient, in soils of this description, the slaty or schistic gravel is much the best; particularly where the slate is of a soft crumbly kind; as such would seem to be in a gradually decomposing state, and usually contains a considerable proportion of calcareous or other fertilizing matter. We have seen some very good soils, which partook largely of a slaty gravel.

Generally speaking, soils which are very gravelly

are hard, and they are usually poor, from much the same causes which contribute to the poverty of soils which are very sandy; and the means of ameliorating each are very similar. But as a hard gravelly soil is much more difficult to mellow than the sandy, the former is, on that account, the least valuable.

Hard gravels must be ploughed very deeply, in order to enable the growing crops to withstand the droughts of summer. Roots which require a deep extension into the earth, and all those plants which are most affected by drought, have but little chance of succeeding in a gravelly soil of this description.

It is most effectually mended by casting earths upon it which are most retentive of moisture: At the same time, it is a soil that is extremely sensible to the operation of gypsum; and, with the aid of that manure, will produce good crops of clover, which in due season, will enable the soil to bear a crop of rye to advantage; and in this way, or something similar, poor gravelly soils may be made to yield considerable profit.

But, as the soils which may be denominated gravelly are some more, and some less, so; some very hard, and dry, some mellow, and not so much affected by drought; we will not pretend to designate particularly the most profitable uses of soils of this kind, as much must depend on their particular character, and as those of the better kinds may often be found very good for most kinds of culture.

The loamy soil is a close, compact, retentive earth, and appears to be similar to clay; with this difference, however, that loam does not crack open when dried. It is also, in general, different in color from the most of clays; the poorer sorts of loam being of a pale yellow; the better sorts of a brownish color; and some are often found of a reddish hue, which are endued with various degrees of fertility; though, generally, they are very good for almost every purpose of farming; particularly when of a dry and mellow kind.

The dark or brown-colored sorts are almost invariably good lands; but best, where they are dry and mellow. The darkness of the color probably denotes the presence of much vegetable matter in them.

Loams of every kind, whether wet or dry, are natural to grass: Some, however, which incline to become mossy, when they have been a few years in pasture, or mowing grounds, require to be more frequently ploughed up; unless the growth of the moss be destroyed by scuffling and top-dressings. We have known gypsum to answer an excellent purpose, in extirpating the growth of moss in a dry loamy soil. This manure was merely scattered over the mossy ground in the spring; when the moss soon gave way to a growth of white-clover.

Loamy lands are generally too cold, and often too wet, for bearing good crops of Indian corn: unless the ground be well warmed and mellowed, by suitable manurings, &c. Some of the dry, reddish, and dark colored kinds, however, answer well for this grain, as well as for almost every other growth. In general, loams are a good wheat soil; unless where they are too wet; and even their wetness may be remedied by hollow draining.

A loamy soil will pay, as well as any other, for what manure is given it, if it be of the right kind.

It is also much easier prepared for crops; than that of which we shall next speak; and, although loams are very various in quality, and in fertility, in general it may be said, that tracts of this soil will usually be found to contain much good farming-lands.

(From the Library of Useful Knowledge.)

THE NORTH DEVON CATTLE.

The north of Devon has been long celebrated for a breed of cattle beautiful in the highest degree, and in activity at work and aptitude to fatten unrivalled. The native country of the North Devons, and where they are found in a state of the greatest purity, extends from the river Taw westward, skirting along the Bristol Channel; the breed becoming more mixed,

and at length comparatively lost before we arrive at the Parrett. Inland it extends by Barnstaple, South Molton, and Chumleigh, as far as Tiverton, and thence to Wellington, where again the breed becomes unfrequent, or it is mixed before we reach Taunton. More eastward the Somersets and the Welsh mingle with it, or supersede it. To the south there prevails a larger variety, a cross probably of the North Devon with the Somerset; and on the west the Cornish cattle are found, or contaminate in the breed. The true and somewhat prejudiced Devonshire man confines them within a narrower district, and will scarcely allow them to be found with any degree of purity beyond the boundaries of his native county. From Portlock to Biddeford, and a little to the north and the south, is, in his mind, the peculiar and only residence of the North Devon.

From the earliest records the breed has here remained the same; or if not quite as perfect as at the present moment, yet altered in no essential point until within the last thirty years*. That is not a little surprising when it is remembered that a considerable part of this district is not a breeding country, and that even a proportion, and that not a small one, of Devonshire cattle, are bred out of the country. On the borders of Somerset and Dorset, and partly in both, extending southward from Crewkerne, the country assumes the form of an extensive valley, and principally supplies the Exeter market with calves. Those that are dropped in February and March, are kept until May, and then sold to the drovers, who convey them to Exeter. They are there purchased by the Devonshire farmers, who keep them for two or three years, when they are sold to the Somersetshire graziers, who fatten them for the London market; so that a portion of the North Devon, and of the very finest of the breed, come from Somerset and Dorset.

The truth of the matter is, that the Devonshire farmers were, until nearly the close of the last century, not at all conscious that they possessed any thing superior to other breeds; but, like agriculturists everywhere else, they bought and bred without care or selection. It is only within the last fifty or sixty years that any systematic efforts have been made to improve the breeds of cattle in any part of the kingdom; and we must acknowledge, that the Devonshire men, with all their advantages, and with such good ground to work upon, were not the first to stir, and, for some time, were not the most zealous when they were roused to exertion. They are indebted to the nature of their soil and climate for the beautiful specimens which they possess of the native breed of our islands, and they have retained this breed almost in spite of themselves.

A spirit of emulation was at length kindled, and even the North Devons have been materially improved, and brought to such a degree of perfection, that, take them for all in all, they would suffer from intermixture with any other breed.

Before, however, we attempt to describe the peculiarities of this, or any other breed, it may be proper to give a short sketch of the proper form and shape of cattle. Whatever be the breed, there are certain conformation which are indispensable to the thriving and valuable ox or cow. When we have a clear idea of these, we shall be able more easily to form an accurate judgment of the breeds of the different counties as they pass before us. If there is one part of the frame, the form of which, more than of any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat, and the lungs to play, or sufficient blood for the purposes of nutriment and of strength will not be circulated; nor will it thoroughly undergo that vital change, which is essential to the

* Lord Somerville, a name justly esteemed among agriculturists, and an excellent judge of cattle, and who, from his residence in the county, may be supposed to be well acquainted with the excellencies and defects of this breed, gives a long and very accurate and interesting account of them in the *Annals of Agriculture*, to which we would refer the reader.

proper discharge of every function. We look, therefore, first of all to the wide and deep girth about the heart and lungs. We must have both: the proportion in which the one or the other may preponderate, will depend on the service we require from the animal; we can excuse a slight degree of flatness of the sides, for he will be lighter in the forehead, and more active; but the grazier must have width as well as depth. And not only about the heart and lungs, but over the whole of the ribs, must we have both length and roundness; the *humped*, as well as the deep barrel is essential; there must be room for the capacious paunch, room for the materials from which the blood is to be provided. The beast should also be ribbed home; there should be little space between the ribs and the hips. This seems to be indispensable in the ox, as it regards a good healthy constitution, and a propensity to fatten; but a largeness and drooping of the belly is excusable in the cow, or rather, notwithstanding, it diminishes the beauty of the animal, it leaves room for the udder; and if it is also accompanied by swelling milk veins, it generally indicates her value in the dairy.

This roundness and depth of the barrel, however, is most advantageous in proportion as it is found behind the point of the elbow, more than between the shoulders and legs; or low down between the legs, rather than upwards towards the withers: for it diminishes the heaviness before, and the comparative bulk of the coarser parts of the animal, which is always a very great consideration.

The loins should be wide: of this there can be doubt, for they are the prime parts; they should seem to extend far along the back: and although the belly should not hang down, the flanks should be round and deep. Of the hips it is superfluous to say that, without being ragged, they should be large; round rather than wide, and presenting, when handled, plenty of muscle and fat. The thighs should be full and long, close together when viewed from behind, and the farther down they continue to be so the better. The legs short, varying like other parts according to the destination of the animal; but decidedly short, for there is an almost inseparable connexion between length of leg and lightness of carcase, and shortness of leg and propensity to fatten. The bones of the legs, and they only being taken as a sample of the bony structure of the frame generally, should be small, but not too small—small enough for the well-known accompaniment, a propensity to fatten—small enough to please the consumer; but not so small as to indicate delicacy of constitution, and liability to disease.

Last of all the hide—the most important thing of all—thin, but not so thin as to indicate that the animal can endure no hardship; moveable, mellow, but not too loose, and particularly well covered with fine and soft hair. We shall enter more fully and satisfactorily into this subject in the proper place; but this bird's-eye view may be useful. We return to the Devonshire cattle.

The more perfect specimens of the North Devon breed are thus distinguished. The horn of the *bull* ought to be neither too low nor too high, tapering at the points, not too thick at the root, and of a yellow or waxy colour. The eye should be clear, bright, and prominent, showing much of the white, and it ought to have around it a circle of a variable colour, but usually a dark orange. The forehead should be flat, indented, and small; for by the smallness of the forehead, the purity of the breed is very much estimated. The cheek should be small, and the muzzle fine: the nose should be of a clear yellow. A black muzzle is disliked, and even a mottled one is objected to by some who pretend to be judges of the true Devon. The nostril should be high and open: the hair curled about the head, and giving, at first appearance, an idea of coarseness which soon wears off. The neck should be thick, and that sometimes almost to a fault.

Excepting in the head and neck the form of the bull does not materially differ from that of the ox, but he is considerably smaller.

The head of the ox is small, very singularly so, relatively to the bulk of the animal, yet it has a striking breadth of forehead. It is clean and free from flesh about the jaws. The eye is very prominent, and the animal has a pleasing vivacity of countenance, plainly distinguishing it from the heavy aspect of many other breeds. Its neck is long and thin, admirably adapting it for the collar, and even for the more common and ruder yoke.

The want of the beautifully arched form of the neck, which is seen in the horse, has been considered as a defect in most breeds of cattle. It is accounted one of the characters of good cattle, that the line of the neck from the horns to the withers should scarcely deviate from that of the back. In the Devonshire ox, however, there is a peculiar rising of the forehead, reminding us not a little of the blood-horse, and essentially connected with the free and quick action by which this breed has ever been distinguished. It has little or no dewlap depending from its throat. The horns are longer than those of the bull, smaller and fine even to the base, and of a lighter color, and sometimes tipped with yellow. The animal is light in the withers; the shoulders a little oblique; the breast deep, and the bosom open and wide, particularly as contrasted with the fineness of the withers. The fore-legs are wide apart, looking like pillars that have to support a great weight. The point of the shoulder is rarely or never seen. There is no projection of bone as in the horse, but there is a kind of level line running on to the neck.

These are characteristic and important points. Angular bony projections are never found in a beast that carries much flesh and fat. The fineness of the withers, the slanting direction of the shoulder, and the broad and open breast, imply both strength and speed, and aptitude to fatten. A narrow-chested animal can never be useful either for working or grazing.

With all the lightness of the Devonshire ox, there is a point about him, disliked in the blood or riding-horse, and not always approved in the horse of light draught,—the legs are far under the chest, or rather the breast projects far and wide before the legs. We see the advantage of this in the beast of slow draught, who rarely breaks into a trot, except when he is goaded on in *citching times*, and the division of whose foot secures him from stumbling. The lightness of the other parts of his form, however, counterbalances the appearance of heaviness here.

The legs are straight, at least in the best breeds. If they are in-kneed, or crooked in the fore-legs, it argues a deficiency in blood, and comparative incapacity for work; and not only for work, but for grazing too, for they will be hollow behind the withers, a point for which nothing can compensate, because it takes away so much from the place where good flesh and fat should be thickly laid on, and diminishes the capacity of the chest and the power of creating arterial and nutritious blood.

The fore-arm is particularly large and powerful. It swells out suddenly above the knee, but is soon lost in the substance of the shoulder. Below the knee, the bone is small to a very extraordinary degree, indicating a seeming want of strength; but this impression immediately ceases, for the smallness is only in front—it is only in the bone; the leg is deep, and the sinews are far removed from the bone. It is the leg of the blood-horse, promising both strength and speed*. It may

* It is sometimes not a little amusing to observe the seeming contrariety of opinion between excellent judges of cattle, and that on the very essential points of their conformation; and yet, when the matter is properly explained, the slight shade of difference there is between them. We have now lying before us letters from two very skillful Devonshire farmers. They have been so obliging as to give us their opinion as to the points of the Devonshire ox. One insists upon that, on which we confess we should lay very great stress, and without which we should reckon any beast almost valueless, namely, small bones under the knee, and a clean neck

perhaps be objected that the leg is a little too long. It would be so in an animal that is destined only to graze; but this is a working animal, and some length of leg is necessary to get him pleasantly and actively over the ground.

There is a very trading fall behind the withers, but no hollowness, and the line of the back is straight from them to the setting on of the tail. If there is any seeming fault in the beast, it is that the sides are a little too flat. It will appear, however, that this does not interfere with feeding, while a deep, although somewhat flat chest is best adapted for speed.

Not only is the breast broad and the chest deep, but the two last ribs are particularly bold and prominent, leaving room for the stomachs and other parts concerned in digestion to be fully developed. The hips, or huckles, are high, and on a level with the back, whether the beast is fat or lean. The hind quarters, or the space from the huckle to the point of the rump, are particularly long, and well filled up—a point likewise of very considerable importance both for grazing and working. It leaves room for flesh in the most valuable part, and, like the extensive and swelling quarters of the blood-horse, indicate much power behind, equally connected with strength and speed. This is an improvement quite of modern date. The fullness here, and the swelling out of the thigh below, are of much more consequence than the prominence of fat which is so much admired on the rump of many prize cattle.

The setting on of the tail is high; it is on a level with the back; rarely much elevated, and never depressed. This is another great point in the blood-horse, as connected with the perfection of the hind quarters. The tail itself is long and small, and taper, with a round bunch of hair at the bottom.

The skin of the Devon, notwithstanding his curly hair, is exceedingly mellow and elastic. Graziers know that there is not a more important point than this. When the skin can be easily raised from the hips, it shews that there is room to set on fat below.

The skin is thin rather than thick. Its appearance of thickness arises from the curly hair with which it is covered, and curly in proportion to the condition and health of the animal. Good judges of these cattle speak of these curls as running like little ripples of wind on a pond of water. Some of these cattle have their hair smooth, but then it should be fine and glossy. Those with curled hair are somewhat more hardy, and fatten more kindly. The favourite color is a blood-red. This is supposed to indicate purity of breed; but there are many good cattle approaching almost to a chesnut hue, or even a bay brown. If the eye is clear and good and the skin mellow, the paler colors will bear hard work, and fatten as well as others; but a beast with a pale skin, and hard under the hand, and the eye dark and dead, will be a sluggish worker, and an unprofitable feeder. Those, however, that are of a yellow color, are said to be subject to *steat* (diarrhoea).

Some breeders object to the slightest intermixture of white—not even a star upon the forehead is allow-

ed; yet a few good oxen have large distant patches of white; but if the colors run into each other, the beasts are condemned as of a mongrel and valueless breed. There are few things more remarkable about the Devonshire cattle than the comparative smallness of the cow. The bull is a great deal less than the ox, and the cow almost as much smaller than the bull. This, however, is some disadvantage, and the breeders are aware of it: for, although it may not be necessary to have a large bull, and especially as those of any extraordinary size are seldom handsome in all their points, but somewhere or other present coarseness or deformity, it is almost impossible to procure large and serviceable oxen, except from a somewhat roomy cow. These cows, however, although small, possess that roundness and projection of the two or three last ribs, which make them actually more roomy than a careless examination of them would indicate. The cow is particularly distinguished for her full, round, clear eye, the gold colored circle round the eye, and the same color prevailing on the inside skin of the ear. The countenance cheerful, the muzzle orange or yellow, but the rest of the face having nothing of black, or even of white about it. The jaws free from thickness, and the throat free from dewlap. The points of the back and the hind quarters different from those of other breeds, having more of roundness and beauty and being free from most of those angles by which good milkers are sometimes distinguished. (To be continued.)

(From the Farmers' Register.)

SOME REMARKS ON FARMING AND GRAZING IN LOWER VIRGINIA.

Norfolk, 28th Oct. 1833.

To the Editor of the Farmers' Register:

Having recently landed in this country, a number of your valuable Register was put into my hands, and as its pages are destined for the reception of any thing tending to promote agricultural improvement, if the following remarks collected during a short and hasty tour through a part of the country in this neighbourhood, be considered of any importance, they are at your service, as they may throw out a useful hint or two for the benefit of planters in general.

Along the greater part of my tour, I was particularly surprised at the almost universal and luxurious growth of weeds on all pasture fields, or fields in grass; and my surprise was not lessened to find that the system of agriculture adopted in this part of the country favored such a growth of weeds, it being considered highly advantageous to the soil; and under that impression they are allowed to increase and flourish unmolested until the ground is again about to be broken up for a corn crop, when they are cut down and burned. I am very far from considering such a system as being otherwise than highly detrimental and exhausting to a soil. Such a luxuriant growth of weeds as generally grow on the low lands of Gloucester county and similar soils, must have an exhausting tendency, and the benefit which they are supposed to impart by preventing the heat of the sun from causing too great an evaporation, is much more than counterbalanced by the quantity of vegetable food extracted from the soil in their growth; and as they are allowed to grow, ripen and die every year, a very small portion if any of such vegetable food again returns to the soil. In highly improved districts of country in England, Scotland, and also in the States, it is the care of every farmer to clear his farm as much as possible from such weeds. The method usually adopted is to cut these weeds previous to their ripening or getting into seed, collecting them into heaps, when they soon form an excellent manure, and are again applied to the soil with benefit; allow weeds to grow along the fence lines of a farm, and it is impossible to keep a farm free from them, as winged seeds are easily carried by the wind, and soon cover hundreds of acres. Cattle in such pastures must suffer severely from the number of flies harbored in such

thickets: and in such fields as I have seen, it was difficult for cows and other bestial at pasture to get to the clover and other grasses of shorter growth. It is a complaint among farmers here that it is impossible to get their lands so well prepared for the reception of wheat and other grain crops as they could wish, from the quantity of roots contained in the soil. Let them adopt the simple mode of cutting these weeds before getting to seed, and in a few years, with careful management, their farms would become comparatively free from such a nuisance. Observing the pastures in such a condition, I felt anxious to learn what profit they derived from their cows and the general mode of management. On one farm in Gloucester county of nearly two thousand acres, and having upwards of thirty cows, the greatest quantity of butter made in any one week was sixty-two pounds, and the whole amount of produce from these cows from the month of April down to this time was only \$152 00, a sum by no means adequate to defray the expense of attending to them. The plan here adopted, is to allow the cows to pasture over a space of nearly six hundred acres, covered higher than themselves with weeds of various sorts. Before sunset, they are collected and enclosed into a pen for milking, and are allowed to remain there over night, until milked next morning, without any fodder. It is impossible for cows to thrive under such treatment. Would it not be a much better plan to confine the cows to a smaller range of pasture, and shift them from one pasture to another once a week or oftener, and instead of penning them up all night without food, to turn them out to pasture? It is impossible for cows in warm and sultry days, and in a climate such as this, to gather more than a bare subsistence throughout the day, when teased with numberless flies, and generally flocking together for the shelter of trees or bushes. It would be a much better plan to place cows into a well ventilated house during the heat of the day, supplying them with a quantity of grass and clover cut from some of the fields, and allowed to be a little deadened before being given. To haul a little earth sprinkled on the floor of the cow house is considered beneficial for cows. The expense of such an additional attendance on cows would be more than recompensed by an increase of dairy produce. On farms of a good size there are in general one or more old or infirm persons who could attend to the cows, and who are unfit for almost any other work. The greater part of their work would be to clean out the manure daily, and supply the grass—in which case, cows would soon learn to assemble to the sound of a horn, and thus give very little trouble. A. N.

[The foregoing letter is from a practical Scotch farmer, whose remarks we shall be glad to receive, whether made on the husbandry of Virginia, or of Scotland. It is always desirable to compare opposite opinions, and by that means, instruction may often be drawn from those, whose previous habits, and the circumstances under which they have been placed, are the most unlike our own. The "enclosing" system, as it was called by its great advocate and introducer, the justly venerated John Taylor, which by forbidding grazing, allows fields to manure themselves slowly by the decay of their own vegetable cover, must seem as improper as it is strange, to a farmer coming from high priced and highly cultivated lands. Nevertheless, where labor is high, and but little profit is to be obtained from grazing, and especially on poor, but improvable soils, the enclosing, or non-grazing plan, is the cheapest and best means of giving putrescent matter to improve the land. But this plan, even when properly carried through, is not suitable to every field—and still less do we defend such practices as our correspondent describes, which by attempting to obtain profit both from feeding cattle and improving the soil by the weeds they leave, in fact serve to lose both the benefits expected. It a farmer is obliged to burn off the weeds before breaking up his field for

cultivation, it proves either that his ploughing is very badly executed—or otherwise, that his soil is so rich, that clover ought to have taken the place of weeds.

[Ed. Far. Reg.]

HORTICULTURE.

(From Loudon's Gardener's Magazine.)
SCRAPS OF HORTICULTURAL CHEMISTRY.
MANURES.

BY G. W. JOHNSTON.

Some manures ameliorate a soil by absorbing moisture from the atmosphere. This property is at least as beneficial to ground that is aluminous as to that which is siliceous; for it is equally useless to either, during such periods of the year as are characterised by a plentiful deposition of rain, but in the droughts of summer, when moisture is much wanting to plants, it is beneficial to both: in very dry seasons it is even of greater importance to clayey soils than to light ones; for vegetation on the former suffers more from long-continued drought than on the latter, inasmuch as that moisture being equally exhaled from each, the surface of the clayey soil becomes eaked and impervious to the air, which is the only grand source of compensatory moisture that is available to the languishing plants, and which is more open to those which grow on light, and consequently more pervious soils.

The following table of the comparative absorbent powers of many manures, &c., is chiefly extracted from *An Essay on the Uses of Salt in Agriculture*, &c., by my brother, Mr. C. Johnston:—

		Parts.
1000 parts	Horse dung, evaporated previously to dryness, at a temperature of 100°, absorbed during an exposure of three hours to air saturated with moisture at 62°	145
	Putrefied tanner's bark, under similar circumstances, (66°)	145
	Unputrefied ditto	115
	Cow dung	130
	Pig ditto	120
	Sheep ditto	81
	Pigeon ditto	50
	Refuse marine salt (60°)	49½
	Soot (68°)	36
	Burnt clay	29
10 parts	The richest soil (in one hour)	23*
	Coal-ashes	14
	Lime (part carbonate)	11
	Crushed rock salt	10
	Gypsum	9
	Chalk	4

The absorbing power of a manure is much influenced by the state in which it is presented to the atmosphere. In a finely divided state, mere capillary attraction assists it; hence, as we have before insisted, the importance of keeping the soil frequently stirred, by hoeing, &c. The most ancient Roman agriculturists were aware of this. "What is good tillage?" says Cato, in his *De Re Rustica*. "To plough. What is the second thing? To plough. The third is to manure." But a mere mass of cotton, by means of capillary attraction, will absorb moisture from the air, yet it parts with it at a very slight elevation of temperature; it is of importance, therefore, to ascertain which are the manures that not only absorb but retain moisture powerfully. The following results of my experiments throw some light on this point:—

Minutes.

10 parts	Pig dung, evaporated to dryness, at a temperature of 106°, and then moistened with 6 parts of water, required for being reduced to dryness again, at the above temperature	135

* Sir H. Davy.

10 parts	Horse dung, under similar circumstances	90
	Common salt	75
	Soot	75
	Rich soil	32
	Chalk	29
	Poor soil (siliceous)	23
	Gypsum	18

These experiments point out a criterion by which we easily ascertain the comparative richness of any two given soils or manures; the most fertile will be the most absorbent and retentive.

Some manures increase the growth and vigor of plants, by stimulating their absorbent and assimilating organs. This will only be admitted by those, who, like myself, allow that plants are gifted with sensation; space cannot be permitted me to argue as I would to those who dissent from this opinion, but a few facts, as enumerated in my *Outlines of Botany* (*Gard. Mag.*, vol. ii. p. 338), will, I think, demonstrate that it is impossible to deny that they possess some degree of sensation. "The Venus's Fly Trap (*Dionea muscipula*) has jointed leaves, which are furnished on their edges with a row of strong prickles. Flies, attracted by honey which is secreted in glands on their surface, venture to alight upon them; no sooner do their legs touch these parts, than the sides of the leaves spring up, and locking their rows of prickles together, squeeze the insects to death. The well-known Sensitive Plant (*Mimosa sensitiva*) shrinks from the slightest touch. *Oxalis sensitiva* and *Smithia sensitiva* are similarly irritable, as are the filaments of the stamens of the berberry. One of this sensitive tribe, *Hedysarum gyrans*, has a spontaneous motion; its leaves are frequently moving in various directions, without order or co-operation. When an insect inserts its proboscis between the converging anthers of a kind of Dog's-bane (*Apocynum androsaemifolium*), they close with a power usually sufficient to detain the intruder until his death."

The more I study the phenomena of vegetation, the more I feel convinced on this point. How often have I heard a farmer reply to an observation upon the tardy growth of turnips,—"They will not grow apace, until their leaves are large enough for the wind to take hold of them;" and this is only because plants cannot be healthy and vigorous without exercise. Mr. Knight found that trees which were regularly shaken every day in his green-house, grew more rapidly and strong than others which were kept still.

The stimulating powers of excrementitious manures arise from the salts of ammonia they contain. Sir H. Davy found vegetation assisted by solutions of muriate of ammonia (*Sal ammoniac*), carbonate of ammonia (*Volatile salt*), and acetate of ammonia. Night-soil, one of the most beneficial of manures, surpasses all others in the abundance of its ammoniacal constituents in the proportion of 3 to 1. It may be observed that the nearer any animal approaches to man in the nature of its food, the more fertilizing is the manure it affords. I have no doubt that a languishing plant, one, for example, that has been kept very long with its roots out of the earth, as the orange trees imported from Italy, &c., might be most rapidly recovered, if its stem and branches were steeped in a tepid, weak solution of carbonate of ammonia; and, when planted, an uncorked phial of the solution were suspended to one of the branches, to impregnate the atmosphere slightly with its stimulating fumes.

(From the New-York Farmer.)

SUPERIOR COMPOSITION FOR TREES.

Extract of a letter from HON. J. K. GUERNEY, of Pittsford, to Wm. Prince and Sons.

I avail myself of this opportunity to send you the following statement, respecting the composition for trees.

Many inoculated trees are greatly injured, and finally lost in consequence of the length of time necessary to heal over the stock, where it is cut off, when

no means are used to secure it from exposure to the air and wet.

The wood dies down to some distance, and although, after a time, bark and new wood may grow over, it finally rots, and destroys the tree. The same is true of large limbs cut off, and of bark knocked off by accident. To prevent this the following cheap and easily applied composition is the best remedy I have found. I have used it for more than 20 years, with almost uniform and perfect success.

RECIPE.—One part say one quart, common tar. Two parts, say two quarts, chalk, finely pulverized, and sifted. Put the tar into an iron kettle; heat it and whilst hot, stir in the chalk. Care should be taken not to boil it too much, either when first made or when using it, as that will make it too hard and brittle. Should it by accident become so, add tar, till sufficiently soft. When to be used, heat it over either an earthen or iron portable furnace, or fire made on the ground on or near the place where wanted, so as to boil, or to be sufficiently soft, which a little experience will show, and apply it with a small iron or wooden spatula, covering the wood entirely with a thin coat, and leaving no place for the water to get under the composition. It will remain on for years but may be taken off whenever the bark shall have grown over the wood. It will be found upon examination that there is no dead wood under it. Any one who delights in seeing fine healthy trees, after having once fairly tried the experiment, will never abandon its use. It is particularly valuable for covering the stumps when old trees are headed down. This composition was invented, and an account of it published, by some gentleman, either of England or of Scotland, I think Sir Arthur St. Clair, soon after Forsyth first published the account of his composition for healing wounds in fruit trees, which is very troublesome to make, and still more so to use. It is, probably, known to many horticulturists, but ought to be known to all who cultivate fruit trees; and if you think the publication of these remarks will be useful, they are at your service.

(From Loudon's Gardener's Magazine.)

WATERING FRUIT TREES, &c.

SIR:—It is well known, that although trees of the peach, apricot, plum, apple, &c. are well furnished with blossom buds, the blossoms often fail in their impregnation, and fall off, and, when they are impregnated and set, they fall off at stoning; frequently although they survive the stoning, they become prematurely ripe and fall off, and very few, if any of the fruit attain maturity; while those which do, become vapid and without flavor.

These failures I have proved to be the effect of unwholesome food; and having found a remedy in a simple preparation, I beg the favor of such of your readers as have an opportunity, to make a trial of it, and to state the result. Having selected a tree that is in good condition, and well furnished with blossom buds, just as the blossoms are beginning to expand, take a potato fork, and with it make holes all over the surface of the space occupied by the roots (which extend as far from the stem as the branches,) at about 18 inches apart, by forcing in the fork to the full depth of its tines, and giving it a gentle heave by pressing on the end of the handle; then, having dissolved some nitre in water, (in the proportion of one ounce to three gallons of water,) fill the holes with the solution. No manure must be given; but if, after the stoning of the fruit, the tree should appear to be unequal to sustaining its crop of fruit, the following preparation may be given, in the same manner as the nitre:—To one gallon of blood, add one gallon of water and one ounce of potash; stir the mixture well, and let it stand for a week or ten days; then pour off the solution from the clot and, mixing one gallon of this liquid with four gallons of water, give it to the trees as above. The remaining clot may be dissolved by adding to it one quart of slacked

lime and one gallon of water to one gallon of clot; but this solution must not be given to fruit trees, as it will produce the effect which the nitre is intended to remedy. It will, however, prove a good manure for the cabbage tribe, as asparagus, celery, &c. This discovery, which I consider to be of great value, I made some years since; and as it is not merely accidental, but the results of a regular course of experiments, made with a view of ascertaining the nature and effects of the food of plants, and is founded on physiological and chemical principles, it will, I have no doubt, lead to the establishment of a much more perfect system of manuring than is at present practised.

I am sir, yours, &c.

JOSEPH HAYWARD.

ON CANKER IN FRUIT TREES

The chief causes of canker in fruit trees are the *bad quality of the soil*, the *want of climate*, and the *scions being wrought on stocks either hard or softer in their nature than themselves*. Trees often do very well for four or five years until the roots have penetrated down into the subsoil, then the roots are put upon hard labor, the nourishment they collect is poor and scanty, and not adequate to support and keep up the stature of the trees. On cutting the young wood it will be found to be of a reddish color at the heart; the bark will crack in several places during winter; and when the trees begin to push in spring, many of the last year's shoots will be found dead, others will grow till midsummer, then the leaves will flag or fade, and two or three feet of the extremities die, and this will be the case every year until at last it will end in the death of the tree. The best remedy is to cut off the perpendicular roots as well as all the infected parts, at the same time filling up the bottom of the trench all round and under the tree with new soil, which should be repeated every three or four years. Fruit trees should never be deep planted; if the roots be three or four inches below the surface it is sufficient, when the trees are firmly staked. In trimming, all the perpendicular roots should be cut off, and the horizontal ones spread out, if they be long, cut them a little to encourage fibres. The way canker is produced from want of climate is, when the trees are swelling up their buds or some of them are even expanded, the severe weather, which often happens early in the spring, stops the flowing of the sap in its passages, and the buds and flowers are injured; a number of prominent spots like blisters appear on the last year's wood, which afterwards crack and become cankered; and thus checks may be experienced more or less through the whole summer. The grafting apple or pear scions on stocks not congenial to them is apt to produce canker. The foliage of the crab points out the foliage of the graft suitable to be put on it. Crabs of small and prickly wood will not support a soft swelled leaved scion long; they may continue a year; two at most will show the disagreement.

[Cal. Hort. Trans.]

CULTURE OF THE HORSE RADISH IN DENMARK AND GERMANY.

The horse radish delights in a good rich and moist loam, and rather a shaded situation. The ground must be trenched and manured the year before planting. In the autumn, when the old roots are taken out of the ground, select all the small side roots from nine to twelve inches in length, and as thick as a quill or thereabouts; tie them in bunches, and preserve them in sand in a place protected from the frost during the winter. The planting is commenced in the beginning or middle of April. In dry weather, divide the ground into beds four feet wide, which, with the mould out of the alleys, should be raised about a couple of inches higher in the middle than the sides of the beds. With a woollen cloth rub off all the lateral fibres from the roots, and also pare off each extremity, so that the wounds may be fresh, then

plant them by inserting them horizontally into the sides of the elevated beds, about a foot apart; and in a quincuncial manner; so that the bottom part of the root is about six or seven inches below the surface, and the top or crown end of the root stands a little out of the side of the bed, remarking that the roots are to be inclined a little, so that their lower extremity is rather deeper than their upper. In the latter end of June or some time in July, take and cut off with a sharp knife all the lateral fibres of each root, which is done by placing the foot on the lower extremity, and carefully lifting the roots out of the ground as far as may be necessary. This operation is performed two or three times every summer. When the operation is over, replace the roots as before, and cover them with mould. The roots or fibres which are left at the end of the main root undisturbed are sufficient to nourish the plant. In the third year the roots have attained their full size. Laying the roots horizontally has the advantage, that they are easily taken out of the ground without breaking; while cutting off the side roots makes the main root grow straight and thick. It is advisable to plant a bed every year.

[London Hort. Trans.]

(From the Genesec Farmer.)

SEEDLINGS FROM GRAFTED AND UNGRAFTED FRUIT TREES.

We lately thought the Indian peach had produced no distinguishable sub-variety. We had seen a great many seedlings of that kind which were not distinguishable from each other; but we have very lately had ocular proof that when the parent tree grows amongst other kinds, the offspring is liable to vary. In one small lot we have seen a number of seedlings, all sprung from seedlings, some ripening their fruit several weeks before others, and some having fruit of a much finer red than others; yet all of it has the long oval shape and the tartness of the Indian peach.

By these observations we are therefore confirmed in our former opinion that the offspring of seedlings, under similar circumstances, are as liable to vary as the offspring of grafted trees.

If we were called on to give a reason for the origin of the contrary opinion, we should suggest that it sprung, like other erroneous opinions, from a neglect to take into view all the facts. Where only one kind is cultivated, the offspring is not subject to the changes arising from hybridism; neither would the offspring of any other solitary variety, though grafted, be subject to those changes. Those who graft however, are the most likely to introduce different kinds which will almost as certainly introduce changes in the seedlings. It is not uncommon to mistake one cause for another.

Why are eggs preserved by rubbing them with butter?

Because the butter closes the pores in the shell, by which the communication of the embryo with the external air takes place. The embryo is not, however, thus killed. Varnish has a similar effect.—Reaumur covered eggs with spirit varnish, and found them capable of producing chickens after two years, when the varnish was carefully removed.

Why is the coloring of cheese unobjectionable, provided it is genuine?

Because the seed, or arnotta, by which the coloring is produced, is slightly purgative and stomachic. It is produced by a bush, or small tree, mostly tropical.

Why does oiled silk, or other air-tight covering, laid on a bed, preserve greater warmth than an additional blanket or more?

Because the oiled silk prevents the ventilation of the person by the slow passage of air, as through the texture of the blanket.

RURAL ECONOMY.

(From the Northern Farmer.)
SALT FOR SHEEP.

In a conversation with us, very recently, an intelligent agriculturist who had bestowed considerable attention on the sheep business, advanced the doctrine, that salt was injurious to sheep in the winter season, when confined to dry fodder; and that none should be given them during the winter, nor in the spring, till after they had been shorn. He said several years of experience had proved to his satisfaction, that sheep thus treated were more free from disease; and would generally, be entirely free from that disgusting accumulation of filth about the hind part of the fleece, so common at the season of shearing. This was new to us; and, we were induced to examine some of the standard writers on this subject.

Daubenton recommends salt to be given to sheep in France, in cold weather, also when the weather is foggy, or when it rains or snows; but says, it should be given in small quantities; as too much heats, or injures them. Livingston, however, informs us, that in Spain, no salt is given to the travelling flocks in the winter, nor on their journey; but when they arrive at the place of their summer pasture, they are allowed as much as they will eat.—No reason, however, is assigned, for not giving salt in the winter; but much, undoubtedly, may be inferred from the uniform practice, in this respect, of the shepherds of Spain. Such authority is, no doubt, a sufficient warrant for trying the experiment. It will probably be a safe one; and, may result in important benefits to the owners of flocks.

MODE OF KEEPING APPLES.

When the fruit is quite ripe commence gathering, taking care not to bruise any of them. They are then to be carried to the fruit room, and placed thinly on shelves, with proper divisions, so as to keep each variety distinct, allow them free air for six or eight days, then procure a quantity of sand which is dried thoroughly on the flue, and mix with it one pound of powdered nitre to each bushel of sand, then dry the jars thoroughly; these jars should be made of glazed stone ware, and in a conical shape, to throw the weight on the jars and relieve the fruit. At the expiration of eight days, examine the fruit and wipe each fruit carefully with a soft towel. (Never allow the fruit to sweat, for although recommended by many it is hurtful to the flavor, injurious to the appearance, and renders the fruit insipid and mealy.) Put a quantity of the mixed sand in the bottom of the jar; then place a layer of fruit in such a way that each apple may be kept apart, cover them with the sand, again place a tier, and go on thus till the jar be filled within a few inches of the top; this upper space fill with sand, seal the tops with putty-lime, attaching a ticket descriptive of the fruit, &c. &c. The jars are to be kept in a room free from frost.—*Cal. Hort. Soc.*

Horses and Cattle.—An intelligent farmer of this town has communicated to us, what he says, is an effectual remedy against injury to horses and cattle, who may have eaten too much grain: It is simply to administer a pint of melted hog's lard as soon as the fact is discovered. He says he has tried the experiment a number of times, and always with success.—*Norridge-wood Journal.*

Enjoyment is not found so much in luxuries as in simple dishes. Fried apples are better and more wholesome than expensive preserves.

Woolens should be washed in very hot suds and hot rinsed. Lukewarm water shrinks them.

Suet and lard keep better in tin than earthen vessels.

MISCELLANEOUS.

(From the Northern Farmer.)

OBSTACLES TO THE DIFFUSION OF AGRICULTURAL SCIENCE.

MRS. EDITOR:—An opinion prevails to a great extent among farmers, that success in agricultural pursuits depends more on the number of acres cultivated, than on the science and skill of the cultivator—more on the amount of labor bestowed, than on the skill with which it is applied.

This opinion might be just, fifty years ago, in some sections of New England (so far as respected the immediate profits of cultivation,) when the lands were new and unexhausted of those principles of fertility, which had been accumulating for thousands of years, by the decomposition of vegetable matter: but such opinions now, in their effects, must be ruinous to the country, as they form the most insurmountable obstacle to the diffusion of such knowledge and practical skill, as would enable us to restore to its original fertility, the lands which our fathers have exhausted by such injudicious husbandry. It is not at all surprising that the farmer who has been brought up under the influence of such opinions, should still pursue the course, which his father pursued, with such apparent success. True, he is unsuccessful, is falling in debt, and perhaps his farm is mortgaged; but he attributes his want of success, to unfavorable seasons, misfortune, or other circumstances beyond his control: without once stopping to reflect, that the entire different condition of his farm requires an equally different course of cultivation. Prejudices, in favor of old modes and old principles, shut out all enquiry from this whole class of farmers. Ask them, why they do not subscribe for some one of the agricultural papers, which are read with so much eagerness, by our most intelligent and successful farmers, and they will tell you that their knowledge on these subjects is already more extensive than their power to execute; that they possess all the skill necessary, but that they have not the means of commanding the labor requisite to make the improvements they wish.

Another important obstacle to the diffusion of correct knowledge on agricultural subjects, is the prevailing taste, among farmers, as well as all other classes, for local politics. Many of our farmers have so much of the care of the Commonwealth upon their hands, that they are compelled to neglect their own private affairs. This is, no doubt, what is understood to be *patriotism*, in these days; but it is most certainly bad husbandry. Ask one of these politicians to subscribe for an agricultural paper, and he will tell you, he is taking, one, two, and perhaps three political newspapers, for which he pays; and perhaps, has two or three others sent to him without pay. This is almost sure to be the case with such prominent politicians as have neglected their own affairs, for the *public good*; or, what is precisely the same thing, for the *good* of office-seekers. This class, therefore, have neither taste nor time, for improving either their farms or their understandings, they are full of business and bustle, in settling the affairs of the nation, till some revolution of the political wheel divests them of all their consequence; and then, it is too late for them to learn first principles, or attend to the more humble business of agriculture.

Neither of these classes can be prevailed on to subscribe for, or read agricultural papers; for the one class is too wise already to profit by them, and the other too busy to attend to the humble science which they teach.

Another obstacle to the more general diffusion of this important science, is that, that class of our citizens, who patronize agricultural publications, and who really believe in their great utility in promoting the best interests of the country, are too sparing of their influence and of their pens on this subject.

Every intelligent farmer who reads an agricultural publication, should feel interest sufficient, to induce him to communicate something, once a year at least, on this subject, for publication; and he might also, if he would exert his influence on others, (and such individuals always possess influence) furnish without much trouble to himself, one additional subscriber to such a paper, annually. In this way much might be added to the value of these publications, and their benefits be much more widely extended.

The obstacles, however, of which I have spoken can never be removed, till a spirit of inquiry shall be awakened among farmers, till they shall believe it necessary to read and examine, as well as to labor; nor until they are convinced that science is as necessary to success, in the pursuits of agriculture, as in any other business of life.

AGRICOLA.

Portsmouth, Nov. 22, 1833.

PRICE OF SHEEP.

Immense droves of Sheep have been bought up in Ohio this season, and driven to Western New-York. One engaged extensively in purchasing for the drovers, has estimated the number driven from Ohio this season at 200,000, which, he says, are purchased at an average of about one dollar per head. We fear that our farmers do not understand the value of that kind of property to the butchers, and that the country will be drained too low of that valuable animal. On that subject we have copied on our first page a short article from Goodsell's Genesee Farmer, published at Rochester, N. Y. the place where a large proportion of these sheep are butchered. If the calculation of Goodsell is correct, if sheep are worth on an average to the butchers \$2 62½ each, two hundred thousand, are worth five hundred and twenty-five thousand dollars; and, if our informant is correct they were obtained for two hundred thousand. We will allow twenty-five thousand dollars for the expense of collecting, driving, and butchering, and ten thousand for incidentals, and it will leave two hundred and ninety thousand dollars for net profits to the speculators. A heavy tax on the industry of Ohio farmers on this one article. We hope our farmers and mechanics may not be obliged to pay it over again in the increased price of woollen cloths.

(Western O. Courier.)

MOVEMENTS OF THE GREAT!

As it is become common now-a-days to note the peregrinations of all distinguished characters, and the various incidents connected therewith, we shall be excused for announcing some movements that have lately come under our observation, which we think quite as interesting as most of those with which the papers are teeming in many parts of the country.

A week or ten days since, a lot of very fine cattle, of the Improved Durham Short Horned Stock, consisting of 1 bull, 3 years old, 2 cows, a heifer and a calf, purchased by Mr. D. Sutton, from Col. Powell, near Philadelphia, passed through this place on their road to Kentucky. The bull, having given out, some distance back, was hauled in a wagon. Mr. Sutton paid liberal prices for these beautiful animals. We have good authority for stating that the bull cost \$4,000—the cow and calf \$700—the other cow \$500, and the heifer \$300.

On Wednesday last, Mr. F. J. Cope's bull *Prince*, was driven through town, on his road to Washington, Pa. having been purchased by Mr. Alexander Reed, of that place. We are sorry that this animal was not purchased and kept in this county. The want of enterprise in our farmers, is driving every thing good from amongst us; and the more liberal of other places are profiting by their carelessness.

Mr. Cope has yet one thorough bred Bull for sale. Is there no redeeming spirit here?

(Westmoreland Intelligencer)

Prices Current in New York, December 7.

Beeswax, yellow, 21 a —. Cotton, New Orleans, 14 a 15½; Upland, 12 a 14; Alabama, — a —. Cotton Bagging, Hemp, yd. 20 a 22; Flax, 18 a 19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, 14.00 a —; rough, 12.75 a 13.00; Flour, N. York, bbl. 5.00 a 5.50; Canal, 5.50 a 5.81; Balt. Howard st. 6.25 a —; Rhd city mills, 6.75 a 6.88; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, — a —; Petersburg, — a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per hhd. 16.50 a —. Grain, Wheat, North, — a —; Vir. 1.17 a 1.18; Rye, North, .75 a .80; Corn, Yel. North, .70 a .74. Barley, .65 a —; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Potatoes, Beef, mess, 8.75 a 9.00; prime, 5.50 a 6.00; cargo, 5.50 a 5.75; Pork, mess, bbl. 14.50 a 15.25 prime, 10.50 a 11.25; Lard, 10 a —.

BOOKS—ADDITIONAL.

Just received at this establishment, and for sale the following books, viz:

Treatise on the Culture of Silk, from the Naturalist, .16
The Gentleman's Pocket Farrier, by F. Tullbell, .19
Treatise on the Culture of Ornamental Flowers by Roland Green, .37
The American Farmer, by H. L. Barnum, .75
The Practical Gardener, containing directions for cultivating a great variety of Garden Vegetables and Fruits, with a Calendarial Index pointing out the course to be pursued by the Gardener in every month in the year, &c. &c. .37

I. I. HITCHCOCK,

American Farmer Establishment.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

I. I. HITCHCOCK,

American Farmer Establishment.

CLOVERSEED—AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price. I. I. HITCHCOCK,

American Farmer Establishment.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK,

American Farmer Establishment.

JACK.

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address—

I. I. HITCHCOCK,

American Farmer Establishment.

A good Jenny is wanted by the owner of this Jack.

RAMS AND EWES.

One Ram of last spring's yearling, of the purest Bakewell blood, at \$75.

One do. one and a half year's old, with a defect* at \$50.

Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.

These beautiful and valuable animals, may be had by application to

I. I. HITCHCOCK,

American Farmer Establishment.

*His testicles are always up in his body—in every other respect he is a very fine ram.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

NEW CHINESE MULBERRY.

(*Morus Multicaulis*.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Eorland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SELDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —. Rappahannock, 3.00 a 4.00.—Kentucky, 4.50 a 8.00. The inspections of the week comprise 155 hhd. Maryland; 55 hhd. Ohio; 6 hhd. Kentucky, and 2 hhd. Pennsylvania—total 221 hhd.

Flour.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5.62½ a 5.75; (wagon price, 5.50 a 5.62½) city mills, 5.62½ a 5.75; city mills, extra, 5.57 a —.—Corn Meal, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.31 per bbl. and 14.75 per hhd.—Grain, red wheat, 1.05 a 1.14; white do 1.15 a 1.25.—Corn, old yellow, 52 a —; white, 51 a —.—new, yellow, 52 a —; white 51 a —; in the ear, 2.50 a — per bbl.; RYE, 66 a 68; chop rye, per 100 lbs. 1.50 a —.—OATS, 35 a 36.—BEANS, 1.50 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—CLOVERSEED, 5.00 a 6.00.—TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—Lucerne 3½ a — lb.—BARLEY, — a —.—FLAXSEED, 1.62½ a 1.75.—COTTON, Va. 13½ a 14½; Lou. 15 a 17; Alab. 14 a 16; Tenn. 13½ a 14½; Upland 14 a 16.—WHISKEY, hhd. 1st p. 2½ a —; in bbls. 29 a 30.—Wool, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 3½ a —.—Plaster Paris, per ton, 3.57½ a —; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.00 a 5.50.—Oak wood, 2.75 a 3.50; Hickory, 4.25 a 4.50; Pine, 2.50.

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The American Farmer.

Edited and published by I. IRVINE HITCHCOCK, is issued every Friday from the "Establishment," No. 16 South Calvert street, Baltimore, Md.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

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THE FARMER.

BALTIMORE, FRIDAY, DEC. 20, 1833.

LIVE STOCK BREEDING AND MANAGEMENT.—We have commenced, and shall hereafter continue to give more particular attention than heretofore to the subject of live stock, in reference to the agricultural interest of our country. Indeed we propose to make this, henceforward, one of the regular departments of the American Farmer; and may perhaps, at the commencement of the next volume, add something indicative of this subject to the title of the paper. We have on hand a considerable stock of very instructive printed matter on this subject, and have also the promise of assistance from some of the most eminent stock breeders and dairymen in this country. We shall endeavor to add to the interest of our paper by this change in its management, and hope our readers will second our efforts by giving us their ideas and observations in this department of rural economy, as well as on agriculture in general.

"UNIVERSAL EDUCATION."—It is cheering to perceive, as we do by our exchange papers, evidence of an increasing attention to the great subject of education, in almost all parts of our country. We observe that societies, lyceums, and other associations for its promotion, are becoming very common in the great and powerful west; and that their efforts are seconded very cordially by a portion at least of the conductors of the public press. The Governor of Pennsylvania, also, in his late message, took particular pains to press it upon the attention of the legislature of that great state; and we are informed, that already that respectable body have made considerable progress towards the establishment of a system of public education, which, it is confidently expected, will be consummated at the present session. This is welcome intelligence; for to us no truth is clearer than that this same "universal education" is absolutely indispensable to the preservation of our present incomparable form of government. If there is any *pandæa* for all the diseases of our body politic—if there is any preventive of that incurable consumption by which all republics have hitherto perished, it appears to us to be the education, as a matter of law and necessity, of every child that arrives at the proper age for instruction. By education, however, we do not mean the study of words and of languages chiefly; but the formation of the mind, the judgment, and the heart or disposition, with regard to men and things; by careful practical training, and a familiarity, from early childhood upwards, with the truths of science—inculcated not by mere words, but by constant exhibitions of objects and experiments; a thorough inculcation of the rights, duties, and interests of citizens; and, at the same time, the acquirement, by practice, of some useful art, trade or manipulation, by which the hands of a healthful body,—guided by the judgment of a sound and well informed head, influenced by the dictates of a heart formed by precept and example to **UNIVERSAL BENEVOLENCE**,—may, without the blighting influence of the false and pernicious dogma, that labor is a curse or a punishment, and less reputable than idleness, secure a livelihood for every individual of the community, and for all those dependent upon him or her for support.

Let such an education be alike the certain legacy from the public to every son and daughter of this republic, and then, if self-government is not indeed a chimera—if liberty and equal rights, in distinction from being bestridden by a booted and spurred master—"by the grace of God," are a reality, we shall prove it. Let it not be forgotten, that while intellectual starvation in mental darkness is the only safe fare for the subjects of a despotism, the very

reverse of these,—the full feast of reason in the broad sunshine of knowledge, is the indispensable aliment of the citizens of a republic.

We must bear in mind, too, that the people of these United States possess one power that those of the so called republics of antiquity never dreamed of; and that, too, the most potent by far, in reference to human knowledge, that has ever existed.—We mean the power of multiplying copies of our thoughts, (if we may say so,) by which the discovery of a truth, or the detection of an error—indeed any good thought, by an individual ever so obscure, becomes, as by magic, the property of a whole community. It is no longer the living teacher and our own individual experience on which we are dependent for instruction: the press,—the all-potent and ever prompting press,—is the engine which influences, and which is destined hereafter forever to influence the world of mind, more than any other power, or than all other powers combined. Let then those who possess influence in society, exert themselves to promote the great cause of education—the practical common sense education of the head, heart, and hands of both sexes, and all conditions; and in his exertions, let him not forget the great steam power of mind—the printing press.

REMOVAL OF THE DEPOSITES.—Our readers know that we have not hitherto meddled with politics.—Party politics and farming we know don't go well together; but we must speak out: this deposite question concerns us too nearly to permit us to be silent. We declare then openly and boldly, that we are in favor of the removal of the deposites. Yes, verily; but let us not be misunderstood. We do not mean the deposites of the nation's cash, but of our own. We have some ten or twelve thousand dollars deposited in the pockets of our subscribers; and these are the deposites we are talking about. These we propose to have removed about the beginning of the year 1834, or sooner, "if arrangements can be made." We therefore request the proper officers of these pocket banks to consider this our "draft at sight," for the amounts they respectively retain of our money, and to forward it by mail without delay. We will then thank them kindly, and "take the risk."

A gentleman porker has addressed a letter to the "Hog Committee of Middlesex," which we insert this week from the New England Farmer. About this time last year we presented our readers with a similar production, from which it would seem that the "march of intellect" has reached the ancient and respectable family of Grunters, and that they are advancing in literary renown. We did not fail to remark that Squire Grunter, in his Diary, holds to the practice, in vogue amongst the most approved modern travelers, of telling his readers the quality and quantity of his breakfasts and dinners. Indeed this part of his narrative has generally, according to modern usage, his first attention; from all of which we infer that the squire is a *pig of letters*, and has had in view, in writing his Diary, sundry learned publications, with which the reading world is well acquainted. We recommend his present letter to the perusal of our readers.

THE MARINE SLEIGH.—Mr. Burden, of Troy, N. Y. the inventor of the new steamboat which may be called, not unaptly, a marine sleigh, has brought her in an unfinished state to New York, to be completed. She is intended and expected to move at the rate of twenty-five miles an hour, and in a late excursion, for the gratification of some scientific gentlemen of New York, though his engine is new, and lacks power from its unfinished state, yet she did actually perform (at times) at the rate of twenty miles an hour. It is expected that boats of

this kind will make their trip, from New York to Albany or Troy, and back again, in a day, with ease, and that the voyage to Europe will be reduced to a duration of a week, or less.

We presume Mr. Burden is indebted, for the fortunate thought of his new principle, to the description so often given of the sea serpent. His two hollow cylinders, three hundred feet long, and eight feet in diameter, on which the super-structure of the boat rests as a sleigh on its runners, or a rocking chair on its rockers, must be a tolerable likeness of a *span* of these Jack Downing entities. If Mr. B. will but embellish them with each a head, a tail, and "a string of bunches like barrels," the conceit of riding on the backs of these far-famed summer visitors, "down east," will be almost perfect—quite as nearly so, however, as we should desire. We propose to Mr. Burden that he call her the Sea Serpent.

We depart somewhat from our general rule, in regard to "new works," to request the attention of our readers to the one mentioned below, which is about to be commenced in this city. Knowing the editor, we have no doubt that it will be well conducted and handsomely executed; and if so, it can scarcely fail to be an instructive and entertaining periodical, well adapted to the use of farmers' families, especially the female part of them. We will with pleasure order the work for any person who may request it, or the editor may be addressed directly.

MAGAZINE OF GARDENING AND BOTANY.

It is proposed to issue a periodical with the above title: devoted wholly to the science and practice of gardening, in all its branches, and to botany, and such of the natural sciences as are subservient to horticulture.

The work will appear early in 1834, and will be published in monthly numbers, in 8vo. form, each number containing 48 pages, at \$5 per annum, payable in advance.

Persons sending the amount of *five* subscriptions, will receive the work for one year *gratis*.

Postmasters generally, are requested to act as agents. They are authorised to retain on money collected, \$1 for every new subscriber, and ten per cent. on all other collections.

Communications must be addressed (post paid) to Dec. 2, 1833. H. F. DICKEHUT, Baltimore.

Capt. W. P. Matthews, of Chestertown, has been kind enough to send us a specimen of vegetables from his plantation, which we must not pass by in silence.

LONG ORANGE CARROTS, which weighed from 1½ to 2 lbs., and one of which measured two feet in length. One was shaped like the human form in every particular, except wanting head and arms.—This one weighed 2½ lbs.

LONG DUTCH PARSNIPS.—These weighed from 1½ to 2 lbs., and measured from two to two and a half feet in length—supposed to be of the genuine Missouri sort; a sort much famed in history, but lately fallen into disrepute in the west, owing to the fact of their growing to so great a depth that the antipodes seize them by the end and draw them through to their side of the world, whereby the crop is lost.

AGRICULTURAL PAPER FOR SCHOOLS.—It is understood that the New York State Agricultural Society contemplate taking the responsibility of a large portion of an edition of many thousands of a monthly agricultural periodical, at the low price of twenty-five to fifty cents per annum. It is principally designed to diffuse a taste for rural pursuits and sciences among the rising generation.

New York, Dec. 1833.

S. F.

AGRICULTURE.

(From Nicholson's Farmer's Assistant.)

EARTHS.

(Concluded from page 315.)

The clayey soil, is the most compact and retentive of any, and, on account of its alumine, has the singular quality of contracting when dried, and expanding again when moistened, as we have before mentioned. Probably the presence of this primitive earth, in this soil, is principally what serves to distinguish it from the more adhesive and compact loams.

Clay is an unpleasant soil to cultivate, for any bood crops; and for those which are cultivated, solely with the plough, more skill, as well as more labor, is requisite in preparing this ground for the reception of seed.

To prepare a soil of this description for bearing a crop requires, on an average, at least double the expense that is necessary for light sandy soils. Clays are, however, strong and durable soils, and, when well cultivated, produce largely of such crops as are most suitable to them. These are, principally, wheat, where the soil is not too wet, barley, oats, beans, peas, vetches, flax, &c. beside several sorts of natural and artificial grasses.

Rye is not so natural to clay. Indian corn, and the various kinds of root-crops, do not flourish in this soil, unless they are powerfully assisted by suitable manures.

Clay, however, by long cultivation, and frequent manurings, in a great measure loses its original character; that adhesive quality, so troublesome in tillage, mostly disappears, and the soil assumes more of the qualities of loam.

The marley soil is merely a clay with a mixture of more or less lime. It is a strong, durable soil, and is more easily fitted for crops than clay, as it has little or none of the adhesion of that earth, being more loose and crumbly. It is better fitted for those crops for which clay is not so well adapted; but, at the same time, is best for those which are best suited for clays.

It is a kind of soil that is not often found in any considerable extent, as far as our observations have extended. In point of color, it probably corresponds with those of clays; and, no doubt, has different degrees of fertility, according to the qualities of the clay, and of the lime, of which it is composed.

The chalky soil is very rare in this country. We never have seen any of it, except in small quantities. It abounds considerably in England; and in some parts of that country, where the surface is wholly chalk, it is, of course, entirely barren. Pure chalk is principally lime, saturated with carbonic acid. In appearance it does not essentially differ from the white marble, with which some bog-swamps are underlaid.

The mucky soil appears to be almost entirely the remains of vegetable matter. It forms the upper stratum of bog-meadows and other rich swamps; and many rich tracts of our wild arable lands have a surface, of a greater or less depth of this earth. In lands of this latter description, it seems to decompose, and disappear, in a greater or less degree, when the ground has been tilled fifteen or twenty years.

Mucky soil is best, when mixed with a due proportion of other suitable earth; and in that case it forms a fine rich soil for tillage, and is well adapted to the growth of almost every kind of crop. The soil of bog-meadows, though very rich to appearance, may, nevertheless, be greatly increased in fertility, by having a suitable quantity of other earth mixed with it.

Of turf soils we cannot say much, if we speak of the surface, or cultivable part of the earth, further than that all rich swards are frequently called turf, and with some degree of propriety; as such swards, when cut up and dried, will answer tolerably well for fuel. But that which is here intended to be particularly spoken of is a fossil, that is generally found in low grounds and boggy places; sometimes extending as high as the surface; but generally lying underneath.

It is sometimes confounded with peat; but this would seem to possess different qualities. Where turf has been dug up, the hole thus made will grow up again, after a number of years; but this is not the case with peat.

Turf would seem to be a mass of vegetable matter, in a partly decomposed state, mixed with a large proportion of living roots of aquatic plants extending through it; and it is probable the addition of vegetable earth, which is produced by the constant growth and decay of these, that causes places from which turf has been dug to fill or grow up again.

In Holland, much turf of this description is taken from the bottoms of the canals, and is used for fuel.

Ireland abounds much in low sunken tracts, which are often chiefly composed of turf, or of peat; of which we shall now speak, and conclude with some observations of these earths which may be more or less applicable to each.

Peat soils sometimes form the surface of the earth; sometimes again this earth is found at various depths underneath, in a more compact form. It abounds much in the cold mountainous tracts of land which forms the northerly and unsettled part of this country (Herkimer) and its vicinity. The surface of the earth there is, in many places, composed of a mass of peat, forming a depth of from one to two, and sometimes three feet.

The timber, where the peaty earth prevails to such extent, is mostly spruce and hemlock. The peat thus formed would seem to be principally the remains of the trees which have sprung from the soil, and in time have become decomposed, to a certain extent, during the course of many thousand years.

Heat and moisture are the principal agents, both in producing and destroying. They cause animals, and vegetables, to expand and grow to maturity; and when they become diseased, and no longer fit to sustain life, the same principles of heat and moisture which before gave life and nurtured them, suddenly decompose them, and cause them to return to dust. Without heat and moisture, there could be no vegetable or animal existence, in the first place; nor any change or decomposition of them, after they had once been formed.

But it requires a certain degree of heat to entirely decompose animal or vegetable matter, of any kind; while, at the same time, the decomposition of either may be in part, or entirely, prevented by the presence of other substances, which are calculated to preserve them from its operation. Thus the Egyptians had an art of embalming animal bodies, so as to enable them to withstand the operation of heat, for thousands of years.

Thus, lean animal flesh, by being immersed in running water a given time, becomes changed into a substance called *adipocire*, resembling spermoceti; and in this state would probably almost bid defiance to the ravages of time.

And something similar to this may be observed of vegetable matter, particularly of the hard and woody kinds. The more solid parts may remain for unknown lengths of time, when buried beneath the surface, in earths, and in temperature, suitable for preserving them; while the parts, which are more easily changed, will decompose to a certain extent, and thus form a mass of peaty or turfy mat-

ter, which will serve to preserve the sounder wood from decomposition or decay.

Such seems to be the case in Ireland. In many of the bogs in that country, trunks of trees are taken up entire and sound; while all the rest has become converted into peat, or perhaps turf.

Peat, when found below the surface of the earth, is a much more solid and compact substance, than that found on the surface; and when dug up, and exposed for some time to the air, becomes hard, like a cinder. When put in compost in which lime is an ingredient, it readily undergoes a further decomposition, and becomes converted into a substance similar to muck, or the black dirt of bog-meadows.

Turf, in composts, will also undergo a similar change; though this earth will gradually decompose, or rot away, by mere exposure to the air. Such, too, is the case with the peaty earth, before mentioned, found on the surface, and, which, on this account, might more properly be classed with turf, did it not differ from that earth, in never growing again, when a part of it has been cut away. Probably this kind of peat should only be identified with that which is found below the surface, by being long placed in a similar situation.

The fossil peat, or that which is found under the surface, burns very freely, when dried, and is superior to turf, as an article of fuel. Peat of this description may also be converted into charcoal, and the red sort, Mr. Elliott, of Connecticut, says, is better for this purpose than wood. The method of converting it to this use is similar to that for wood.

We will now say something in regard to soils which are particularly designated, as being formed of a mixture of some of the principal earthy ingredients; although, in strictness, almost all soils are, more or less composed of mixed ingredients.

The sandy loam soil is generally composed of about equal quantities of what is called a sandy and a loamy soil, mixed together; and as each of these soils has various degrees of fertility, the quality of a sandy loam may depend, for its fertility, upon the sand, or the loam, of which the soil is composed, and sometimes on both united.

A rich sand, and a rich loam, when united in proper proportions, form a most excellent soil; while, at the same time, a poor yellow sand, united with a poor hard loam, form but an indifferent soil; though it may be much improved by manuring.

Generally speaking, sandy-loam soils are nearly equally good for all kinds of products, excepting for grasses which require moist or wet soils. Taking all the good qualities of this soil into consideration; the pleasantness, and ease, with which it may be tilled; its suitability to such a variety of crops; its being suitable to gypsum, one of the cheapest of all manures, and its forming one of the best kinds of earth for roads; all these circumstances tend to enhance the value of this kind of soil, and to render it one of the most valuable which generally falls to the lot of the farmer.

Of the gravelly loam there are also varieties of soil, in point of fertility; some forming very fine soils, and same but indifferent; the soil, in this case, forming its character mostly from the quality of the loam: though often from the kind of gravel with which the loam is mixed. A due proportion of schist, or slaty gravel, mixed with loam of a good quality, must naturally form a very fine soil; while on the contrary, coarse gravel, especially of the flint kind, when mixed with a poor loam, must form a soil of no great value for cultivation. Poor, dry, gravelly-loams are, however, greatly assisted by the use of gypsum.

A sandy-clay is a kind of soil that does not often prevail to any great extent. A good clay, with a due proportion of good sand mixed with it, must naturally form a good soil for most purposes: Not

so good, however, for Indian corn, and for most kinds of roots, as a good sandy-loam.

A gravelly clay is also but seldom found, and is commonly of but poor quality; as a rich clay has seldom or never any gravel in it.

The degree of fertility which any soil may possess, is not always to be estimated by its general appearance. Much depends on the ingredients of which the soil is composed.

Mr. Davy, of Great Britain, makes mention of a very fertile soil, for grain, at Ormiston, in that country, which contained, in one hundred parts, eleven of mild calcareous earth, twenty-five of silicious sand, and forty-five of finely divided clay. It lost nine parts in decomposed animal and vegetable matter, and four in water, and afforded indications of a small quantity of phosphate of lime.

He attributes its extreme fertility to the presence of the phosphate, as this is found in wheat, oats, and barley, and is, probably part of their food.

The soil of the lowlands of Somersetshire, which is famous for producing wheat, and beans, without requiring any manure, he found to consist one-ninth of sand, chiefly silicious, and eight-ninths of calcareous marl, tinged with iron, and about five parts in the hundred of vegetable matter.

This soil contained no phosphate, or sulphate, of lime; and he attributes its fertility principally to its power of attracting vegetable nourishment from water, and from the atmosphere.

Sulphate of lime (gypsum) has little or no effect, as a manure, on lands in Great Britain. Here, it operates powerfully on much of our lands. The soil, then, which is found so productive in that country, might not be found equally so in this.

Mr. Tillet, in some experiments made on soils near Paris, found that one composed of three-eighths of clay, two of river sand, and three of the parings of limestone, was very proper for wheat.

By analysing the most fertile soils, in different parts of the country, and comparing the results with those which are poor, in the same neighborhoods, the deficiencies of the latter might be readily ascertained, so as to be enabled to point out what additions of earths, or other substances, are requisite for the most permanently bettering the condition of the poorer lands.

Were the researches of chemists directed to this branch of the science, it is believed that very important benefits to the community might eventually be the result. But this seems to be properly a national, and not an individual concern. Were the chemist to make the most important discoveries, in his researches in this branch of the science, the result, with whatever expense attended, could be of little benefit to himself, further than gratifying his love of fame; while, at the same time, the farming interest might derive immense benefit from his labors.

Governments might, therefore, be acting more wisely than is generally imagined, by establishing National Farms, and supporting the expenses of chemical researches in this particular, as well as every other that may tend to the advancement of agriculture. The expense of institutions of this kind would be but trifling, compared with the national benefits which would probably be derived from them.

We shall close our observations on this recalcitrant subject, with observing that earths, or soils, may be productive of very different degrees of fertility, according as they may be found in different situations, as well as in different climates.

A stiff clay, for instance, in a very cool moist climate, might be found unfit for crops of grain; but, let the same clay have an understratum of sand, at the depth of about ten or twelve inches, and its character for fertility would be much altered for the better. At the same time, a similar clay, when

placed under the equator, would probably not be essentially benefited by an understratum of sand.

A light sandy soil, in the climate first mentioned, may easily be rendered productive; while the same earth, when long laid bare to a burning sun, may become a frightful barren waste, where the sand is blown about by the winds. Yet, in such climates, if the same earth were underlaid with clay, at a proper depth, the soil might be found tolerably productive.

IMPROVED LIVE STOCK.

The Hon. Henry Clay, while at his recent visit to Albany, offered for a bull and a heifer calf, six months old, belonging to Gen. S. Van Rensselaer, jr. four hundred dollars, which were refused.

They were from the famous stock of short horn Durham cattle, imported by Gen. S. Van Rensselaer in 1823, from the herd of Mr. Champion, England.

We are also informed that Mr. Bement, of Albany, is about importing some of the late improved breed of Durham cattle, as well as some of the much esteemed Southdown sheep.

Mr. Hawes, an English gentleman, lately settled near Albany, brought out with him last fall some of the Berkshire breed of hogs, which were very much admired at the fair, and the demand for the pigs was so great that he could not supply one half the demand.

We have two most beautiful pigs, or rather hogs, of this breed, three months old, obtained from Mr. Brientnall, of Goshen, N. Y. We have not had the pleasure of seeing Mr. Hawes' pigs, but if they are superior to ours, there is no wonder that the demand exceeds the supply.—*New York Farmer.*

HORIZONTAL TRENCHING.

Writers in the Southern agricultural papers dwell much on the importance of preventing the soil on declivities from being washed away. To prevent this, horizontal trenches to carry off the water are made, about three quarters of an inch fall in the distance of twelve feet. By this means the water escapes gradually without injuring the soil, and without disfiguring the field.—*Id.*

(From the Library of Useful Knowledge.)

THE NORTH DEVON CATTLE.

(Concluded from page 316.)

Their qualities may be referred to the three points; their working, fattening, and milking.

Where the ground is not too heavy the Devonshire oxen are unrivalled at the plough. They have a quickness of action which no other breed can equal, and which very few horses exceed. They have also a degree of docility and goodness of temper, and also stoutness and honesty of work, to which many teams of horses cannot pretend. Vancouver, in his Survey of Devonshire, says, that it is a common day's work on fallow land for four steers to plough two acres with a double-furrow plough. Four good Devonshire steers will do as much work in the field, or on the road, as any three horses, and in as quick, and often quicker, time, although many farmers calculate two oxen to be equal to one horse. The principal objection to the Devonshire oxen is, that they have not sufficient strength for tenacious clayey soils: they will, however, exert their strength to the utmost, and stand many a dead pull, which few horses could be induced or forced to attempt. They are uniformly worked in yokes, and not in collars. Four oxen, or six growing steers, are the usual team employed in the plough.

There is a peculiarity in driving the ox team, which is very pleasing to the stranger, and the remembrance of which, connected with his early

days, the native does not soon lose. A man and a boy attend each team; the boy chants that which can scarcely be regarded as any distinct tune, but which is a very pleasing succession of sounds, resembling the counter tenor in the service of the cathedral. He sings away with unwearied lungs, as he trudges along almost from morning to night, while every now and then the ploughman, as he directs the movement of the team, puts in his lower notes, but in perfect concord. When the traveller stops in one of the Devonshire valleys, and hears this simple music from the drivers of the ploughs on the slope of the hill on either side, he experiences a pleasure which this operation of husbandry could scarcely be supposed to be capable of affording. This chanting is said to animate the oxen somewhat in the same way as the musical bells that are so prevalent in the same county. Certainly the oxen move along with an agility that would be scarcely expected from cattle; and the team may be watched a long while without one harsh word being heard, or the goad or the whip applied. The opponents of ox-husbandry should visit the valleys of north or south Devon, to see what this animal is capable of performing, and how he performs it.

The profit derived from the use of oxen in this district arises from the activity to which they are trained, and which is unknown in any other part of the kingdom. During harvest time, and in catching weather, they are sometimes trotted along with the empty wagons, at the rate of six miles an hour, a degree of speed which no other ox but the Devon has been able to stand.

It may appear singular to the traveller, that in some of the districts that are supposed to be the very head-quarters of the Devon cattle, they are seldom used for the plough. The explanation, however, is plain enough. The demand for them among graziers is so great, that the breeders obtain a remunerating price for them at an earlier age than that at which they are generally broken in for the plough.

They are usually taken into work at about two years, or twenty-six months old; and they are worked until they are four, or five, or six: they are then grazed, or kept on hay, and in ten or twelve months, and without any further trouble, they are fit for the market. If the grass land is good, no corn, or cake, or turnips, are required for the first winter; but, of course, for a second winter these must be added. The grazier likes this breed best at five years old, and they will usually, when taken from the plough, fetch as much money as at six. At eight, or nine years, or older, they are rapidly declining in value.

Lord Somerville states, that after having been worked lightly on the hills for two years, they are bought at four years old by the tillage-farmer of the vales, and taken into hard work from four to six; and, what deserves consideration, an ox must be thus worked, in order for him to attain his fullest size. If he is kept idle until he is five or six, he will invariably be stunted in his growth. At six he reaches his full stature, unless he is naturally disposed to be of more than ordinary size, and then he continues to grow for another half-year.

Their next quality is their disposition to fatten, and very few rival them here. They do not, indeed, attain the great weight of some breeds; but, in a given time, they acquire more flesh, and with less consumption of food, and their flesh is beautiful in its kind. It is of that mottled, marbled character so pleasing to the eye, and to the taste. Some very satisfactory experiments have been made on this point.

Mr. Carpenter, a very intelligent farmer, informs us, that the Duke of Bedford, who has considerable property in the county of Devon, has some prime Hereford oxen sent to his Tavistock estate

in the month of April, and he ordered some Devons to be bought in Crediton market at the latter end of the same month. The Devons were not in so good condition as the Herefords when they were put to grass, and cost about 5*l* per head less than the Herefords; but at the latter end of December, when they were all sold to the butcher, the Devons were superior in fatness and in weight.

A more satisfactory experiment was made by the same nobleman. Six oxen were selected in November 16, 1797, and fed until December 10, 1798, and the following was the result:

	First weight, cwt. qrs. lbs.	Second weight, cwt. qrs. lbs.	Gained, cwt. qrs. lbs.	Zoot oil cake, Turnips, lbs.	Hay, lbs.
1 Hereford,	17 0 1	18 3 0	1 3 27	2700	457
2 Do.	18 1 0	21 0 25	2 3 25	423	432
3 Devon,	14 1 7	17 2 7	3 1 0	438	295
4 Do.	14 2 4	19 1 0	4 2 11	412	442
5 Sussex,	16 2 0	19 3 0	3 1 0	432	392
6 Leicester,	15 2 13	18 2 0	2 3 14	431	400

An experiment of the same nature was made, in order to compare the fattening properties of the Glamorgan with the Devon. They were fed from January 6, to December 1, 1804, and the following was the result.

	First weight, cwt. qrs. lbs.	Second weight, cwt. qrs. lbs.	Gain, cwt. qrs. lbs.
1 Devon,	13 1 7	17 3 7	4 2 0
2 Do.	16 6 10	20 3 14	4 3 2
3 Glamorgan,	13 3 0	16 0 14	3 3 18

We are aware that other experiments have been instituted, and with different results. One was made about the same time at Petworth, by the Earl of Egremont. Eight oxen, consisting of three Herefords, three of the Sussex breed, and three Devons, were put up to fat. They were allowed only sixteen weeks, they had not the trial nearly of a twelvemonth, as in the Duke of Bedford's experiment, and the Devons were found to be lowest on the list, and that to a very considerable extent. These Devons, although selected fairly enough, were probably exceptions to their general character for rapid thriving. We are, however, compelled to add, that the Duke of Bedford has, to a considerable extent, changed his breed at Woburn, and the Devons have in a great degree, given way to the Herefords.

Of the extent to which prejudice will mislead the best judges, we have a remarkable instance in one of the most zealous patrons of the short horns in Worestershire, who thus speaks of the Devonshire cattle in the Farmer's Magazine, February, 1827. "Of the late maturity of the Devons I had an opportunity to form a tolerably correct opinion at Bridgewater fair, where the best possible muster of Devonshire oxen is made. I saw one, and only one good ox among them. With the exception of this animal, I did not see one level carcase, but a want of beef in the roasting parts, low and poor loins, coarse shoulders, bad twist, and a general want of the indications of inside proof."

He saw one of these oxen after it was killed, and he

The North Devon oxen are rarely shod, and very rarely lame.

For the dairy, the North Devons must be acknowledged to be inferior to several other breeds. The milk is good, and yields more than an average proportion of cream and butter; but it is deficient in quantity. There are those, however, and no mean judges, who deny this, and select the North Devons even for the dairy.

Mr. Conyers, of Copt Hall, near Epping, a district almost exclusively devoted to the purposes of the dairy, preferred the North Devons on account of their large produce, whether in milk, butter, or by suckling. He thought that they held their milk longer than any other sort that he had tried; that they were liable to fewer disorders in their udders; and that being of small size, they did not eat more than half what larger cows consumed. He thus sums up his account of them: Upon an average, ten cows give me five dozen pounds of butter per week in the summer, and two dozen in the winter. A good North Devon cow fets two calves a year. My thirty North Devon cows have this year (about 1788) upon an average produced a profit of 13*l*. 14*s*. per cow.

Mr. Rogers, veterinary surgeon at Exeter, and to whom we are indebted for some valuable hints, says that the quality of the milk is good, and the quantity remunerating to the dairyman. Such is not, however, the common opinion. They are kept principally for their other good qualities, in order to preserve the breed; and because, as nurses, they are indeed excellent, and the calves thrive from their small quantity of milk, more rapidly than could possibly be expected.

This aboriginal breed of British cattle is a very valuable one; and seems to have arrived at the highest point of perfection of which it is capable. It is heavier than it was thirty years ago, yet fully as active. Its aptitude to fatten is increased, rather than diminished; and its property as a milker could not be improved, without probable or certain detriment to its grazing qualities.

Mr. Rogers tells us, that two breeders with whom he is acquainted, have lately attempted to cross the North Devons with the Herefords, but that the result was not satisfactory. We can account for that. Those points in which the Devons were deficient thirty years ago, are now fully supplied, and we cordially agree with him, that all that is now wanting, is a judicious selection of the most perfect of the present breed, in order to preserve it in its state of greatest purity. Many of the breeders are as careless as they ever were; but the spirit of emulation is excited in others. Mr. Davy, of North Moulton, lately sold a four-year old bull, for which the purchaser had determined to give one hundred guineas had it been asked; and Mr. Henwood of Crediton has now twenty-one cows, which, within a month from the period of losing their milk, would average at least ten score per quarter. The Duke of Som-

says, "I never beheld a worse animal under similar circumstances. The meat was actually running about the stall, being nothing more than a mixture of flabby masses, deficient of firmness of texture and quality."

"A writer in the Farmer's Magazine," Mr. Herbert, thus describes the Devonshire ox: "Nimble and free, outwalking many horses, healthy and hardy, and fattening even in a straw-yard, good tempered, will stand many a dead pull, fat in half the time of a Sussex, earlier to the yoke than steers of any other breed, lighter than the Sussex, but not so well horned, thin fleshed, light along the tops of his ribs, a sparkling cutter, and lean well intermixed with fat."

Of the cow, he says, "Red, starred, or white faced, better horned than the ox, very quiet, the playmate of the children, a sure breeder, a good milker, a quick fatterer, fair grass-fed beef in three months. The ox from 110 to 130 stone, and has been fed to 170; and the cow, to 70 or 80."

erset is a zealous patron and improver of the breed, and has some beautiful cattle; and, whatever may be the case at Woburn, the Duke of Bedford here gives almost exclusive preference to the Devons. When offering it as his opinion, that the Devonshire cattle are more than usually free from disease, Mr. Rogers gives a hint that may be useful in every district of the kingdom. He attributes, and very truly, the greater part of the maladies of cattle, and all those of the respiratory system, to injudicious exposure to cold and wet; and he asks whether the height and thickness of the Devonshire fences, as affording a comfortable shelter to the cattle, may not have much to do with this exemption from disease.

Mr. Roberts, veterinary surgeon at South Moulton, informs us that the North Devons have been crossed with the Guernsey breed, and that the consequence has been, that they have been rendered more valuable for the dairy; but they have been so much injured for the plough, and for the grazier, that the breeders are jealous to preserve the old stock in their native purity. Mr. Roberts speaks of a gentleman of South Moulton, who was very tenacious in preserving unsullied a breed of first-rate North Devons, and who refused fifty guineas for a cow in calf. He sold her, afterwards, for 32*l*. when she was thirteen years old. When this gentleman sold off his stock, twelve cows fetched on an average 36*l*. each.

Mr. Carpenter, to whom we have already alluded, says, that "one cross of the North Devon with the Hereford is of advantage, as we have additional size and aptitude to fatten without losing activity." We apprehend that he refers to the state of these cattle some years ago, and when they were lighter, rather than to the present improved breed; but he very judiciously adds, "it must be one cross alone,—you must not exceed the first dash,—or you destroy the activity in labor, which is the principal source of profit to a Devonshire farmer." He adds, "never introduce heifers; but get a bull of the very best blood, and after the first cross, return to the best Devon bull again, and continue until the white face is nearly extinct before you attempt to cross a second time. The Durhams have been tried, but they will not work, and are too much loaded with coarse plain meat in the fore-quarter."

The treatment of the calf is nearly the same in every district of North Devon. The calves that are dropped at Michaelmas, and sometime afterwards, are preferred to those that come in February; notwithstanding the additional trouble and expense during the winter. The calf is permitted to suck three times every day for a week. It is then used to the finger, and warm new milk is given it for three weeks longer. For two months afterwards it has plenty of warm scalded milk mixed with a little finely powdered linseed-cake. Its morning and evening meals are then gradually lessened; and, when it is four months old, it is quite weaned.

* The following account of the principal cattle fairs in Devonshire, and principally for the sale of the North Devon breed, is extracted from the Annals of Agriculture:—

"Those who would seek this breed at fairs, will find them first at Ashbrittle, a bordering parish between the two counties (Devonshire and Somerset,) held for oxen on the 25th of February; but this does not terminate as to prices. Bishops Lydiard, five miles to the west of Taunton, on the 25th of March, for oxen also. At this and Wellington, which are greater fairs than Ashbrittle, prices of stock are fully ascertained. Banstaple, the Friday before the 21st of April. The great monthly markets of Taunton, Wiveliscomb, Tiverton, and Moulton, carry on the business till the fairs of Crediton, the 11th of May, West Bagborough, the 12th, and Wiveliscomb the 13th. North Moulton, first Wednesday after the 12th of May. Bampton, Whit Tuesday; and South Moulton, Wednesday before the 23d of June."

Of the other districts of Devonshire little need be said. Towards the south, extending from Hartland towards Tiverton, the North Devons prevail, and in their greatest state of purity. There are more dairies than in the north, and supplied principally by the North Devon cows, and a few of the South Devons. Such are the differences of opinion even in neighboring districts, that the later calves are here uniformly preferred, which are longer suckled, and afterwards fed with milk and linseed-meal.

Advancing more to the south, and towards the borders of Cornwall, a different breed presents itself, heavier and coarser. We have arrived now in the neighborhood of Devonport, where larger cattle are required for the service of the navy; but we must go a little more to the south, and enter on the tract of country which extends from Tavistock to Newton Abbot before we have the South Devons in full perfection. They are a mixture of the North Devons with the native breed of the country, and so adapted do they seem to be to the soil, that all attempts to improve them, so far as grazing and fattening go, have utterly failed. They are often 14 cwt. to the four quarters; and steers of 21 cwt. are got with fair hay and grass to weigh from six to nine cwt. They bear considerable resemblance to the Herefords, and sometimes the color and the horns and the white face are so much alike in both, that it is difficult to distinguish between them, except that they are usually smaller than the Herefords.

There are very few parts of the country in which there is such bad management, and utter neglect of the preservation of the breed as in this and the most eastern part of Devon. It is not properly a grazing district except in the neighborhood of Tavistock; but young cattle are rather brought forward for after-grass or turnips elsewhere than finished here for the market, and the method in which this is conducted is not to be commended. If a calf looks likely to fatten, it is suffered to run with the cow ten or twelve months and then slaughtered. If others that had not before shown a disposition to thrive now start, they are forwarded as quickly as may be, and disposed of; and therefore it is, that all those that are retained, and by which the stock is to be kept up, are the very refuse of the farm. Yet the breed is not materially deteriorated. It has found a congenial climate, and it will flourish there in spite of neglect and injury. *The grand secret of breeding is to suit the breed to the soil and climate.* It is because this has not been studied, that those breeds which have been invaluable in certain districts, have proved altogether profitless, and unworthy of culture in others. The South Devons are equally profitable for the grazier, the breeder, and the butcher; but their flesh is not so delicate as that of the North Devons. They do for the consumption of the navy; but they will not suit the fastidious appetites of the inhabitants of Bath, and the metropolis.

The farmers in the neighborhood of Dartmoor breed very few cattle. Their calves are usually procured from East Devon, or even from Somerset or Dorset. They are reared at the foot of the moors for the use of the miners. All, however, are not consumed; but the steers are sold to the farmers of the South Hams, who work them as long as they are serviceable; they are then transferred to the graziers from Somersetshire, or East Devon, or Dorset, by whom they are probably driven back to their native country, and prepared for the market of Bristol or London. A very curious peregrination this, which great numbers of the west country cattle experience.

As we now travel eastward, we begin to lose all distinctness of breed. The vale of Exeter is a dairy district, and, as such, contains all kinds of cattle,

according to the fancy of the farmer. There are a few pure North Devons, more South Devons, and some Alderneys; but the majority are mongrels of every description: many of them, however, are excellent cows, and such as are found scattered over Cornwall, West Devonshire, Somerset and part of Dorset.

As we advance along the south and the east, to Teignmouth, Exmouth, Sidmouth, and over the hill to the fruitful vale of Honiton, we do not find oxen so much used in husbandry. The soil is either a cold hard clay, or its flints would speedily destroy the feet of the oxen. The same variety of pure North and South Devons, and natives of that particular district, with intermixtures of every breed prevail, but the South Devons are principally seen. Some of these cows seem to unite the opposite qualities of fattening and milking. A South Devon has been known, soon after calving, to yield more than two pounds of butter a day; and many of the old southern native breed are equal to any short horns in the quantity of their milk, and far superior to them in its quality.

I must not quit this part of the country without describing the *clouted cream*, which is peculiar to the west of England. The milk is suffered to stand in a bell-metal vessel four and twenty hours; it is then placed over a small wood fire, so that the heat shall be very gradually communicated to it. After it has been over the fire about an hour and a half, and is approaching to the state of *simmering*, the vessel is struck every now and then with the knuckle, or is very carefully watched. As soon as it ceases to ring, or the first bubble appears, a slight agitation or simmering, previous to boiling, has commenced; and the secret of the preparation is that this simmering shall not proceed to boiling. The milk is immediately removed from the fire, and set by for twenty-four hours more. At the end of this time all the cream will have arisen, and be thick enough to cut with a knife. It is then carefully skimmed off. This is a great luxury with coffee or with tarts, and the Devonshire strawberries and cream need no praise.

The dairy people in these districts say, that it is the most profitable way of treating the milk; that five pounds of butter can be obtained from a given quantity, where only four would be yielded by the ordinary method; and that the butter is more saleable, on account of the pleasant taste it has acquired, and which even its occasional slight smoky flavor scarcely impairs. The milk is proportionably impoverished; but it also has gained a taste which renders it more grateful to the pigs; while it never scours them, but removes the diarrhoea produced by other food. The skim-milk cheese must, however, be abandoned, or if a little is made, it is exceedingly poor and tasteless.

(From the New-England Farmer.)

BAYBERRY, OR MYRTLE WAX.

The Vegetable Wax, called Bayberry in the Northern, and Myrtle Wax in the Southern parts of the United States, is the produce of a shrub called by botanists *Mirica Cerifera*, which sometimes grows to the size of a small tree, and is found abundantly along the coast, from Maine in the North, to Texas, on the Gulf of Mexico. The wax is extracted from this shrub by collecting the berries, boiling them with water, and bruising them at the same time, by which the wax will rise to the top as a thick oily scum, easily separated, which, when cold, turns out a moderately hard substance, of a green dingy color. After chemical investigation, that substance has been found to resemble bees' wax so closely in the most important properties, that they may be classed under the same genus of chemical bodies.

Until now, the use of this wax has been very

limited; the farmers pick up in swamps and the woods a sufficient quantity to supply themselves with candles; and if there is any surplus, they send it to market in New York, Boston, or other northern places, where it is bought by candle makers, who mix it with their tallow, in order to correct in summer, the extreme softness of their candles.

Notwithstanding the abundance of its growth, the picking up of the berries among swamps, thick wood and mire, is so laborious, that people who have attempted the collection of the wax as a special business and matter of trade, have found that one single bushel of berries is the utmost a stout and active man can collect in one day's work; hence its price in market is very high, fluctuating between 18 and 25 cents per pound.

The object of this publication is to invite the attention of farmers to the cultivation of the shrub affording the myrtle wax, in order to bring its price down to that of tallow. It is obvious that should the shrubs be collected in one field, consequently ready at hand—it is obvious, I say, that the same man, who, under the difficulty of wandering in swamps, wood and mire, can collect but one bushel, shall be able when he finds the shrubs gathered together in the same field, to pick up in the same space of time, from three to four bushels, can also deliver his wax at a price proportionately reduced; that is to say, from 25, to 8, 9, or 10 cents per pound.

The question now is, to investigate what will be the nett produce of an acre planted in myrtle wax, the wax selling at the reduced price of 10 cents per pound.

Let us suppose each shrub planted at two and a half feet from each other, there will be in one acre 6724 of them; supposing, next, the average product of each shrub to be only one pint of the berries—then the whole crop will amount to 6724 pints, making up 105 bushels. Now, experience has shown by those who follow the trade, that the quantity of wax obtained from a bushel of berries, averages from 5 to 8 pounds; then our 105 bushels of berries would yield 630 pounds of wax, which, at 10 cents a pound, tallow price, would make \$63.

As we have stated already, one man will pick up in a field from 3 to 4 bushels in one day, it follows that the picking of the whole 105 bushels, will require the labor of a hand during a whole month; admitting \$18 for the wages and finding—then \$18 deducted from \$63, the value of the crop as before stated, the balance \$45, will be the nett profit accruing to the farmer.

Besides such a valuable income, this culture receives additional recommendations from the following circumstances:

1st. It grows in the worst soils, especially if damp and sandy.

2d. It requires no fences, as the cattle do not meddle with it.

3d. Once planted, it requires no attendance except in picking time.

4th. The picking may be performed by boys, girls, old men and old women, who else would be useless on the plantation.

5th. By a process discovered lately, the myrtle wax may be bleached to a degree of whiteness equal to that of bees' wax. This process adds only five cents per pound to the original price, is done in a short time, and within the power of every individual to perform.

6th. A soap equal, if not superior, to any shaving or fancy soap imported from Europe, can be manufactured of the myrtle wax.

A pailful of ley, with a piece of copperas half as big as a hen's egg boiled in it, will color a fine nankeen color, which will never wash out. This is very useful for the lining of bed quilts, comforts &c.

HORTICULTURE.

CULTURE OF THE CALLA ÆTHIOPICA, OR LILY OF THE Nile.—This beautiful flower is scarcely ever seen in any thing like the perfection to which it is capable of being brought, owing entirely to a defective mode of culture almost universally practised. It is generally seen in our green house collections, treated in the same manner as other pot plants—like geraniums, &c. for instance, that is placed in small pots with ordinary compost, and watered in the ordinary way. The result is small plants, and of course small flowers, the latter not larger than an ordinary table spoon. Now the *Calla Æthiopica* is capable of being made one of the most beautiful of all the plants adapted to common parlor ornament, as the writer of this has abundantly proved by practice. The calla is a water plant, as much so as the pond lily, and hence we ought to infer that it requires a rich soil perfectly and continually saturated with water. The writer of this took a plant in the spring of 1832, and plunged it into a tub of mud, that had been long in use for containing water for garden use, and was then continually receiving the drainage from a neighbouring pump. In a few weeks the plant began to grow with astonishing vigor, and late in the fall he took it up and put it in a fourteen inch pot, filling the latter with the mud from the tub, and setting the pot in a deep basin, and keeping the mud constantly saturated with rain water. Under this treatment the plant continues to grow vigorously.—The main plant is now four feet and a half high from the top of the pot; its leaves fifteen inches long and eight wide, and of proportionate size. Notwithstanding the great size of the main plant it has ten offsets yet adhering to it from two to three feet high and of stout growth, all of the last summer's produce, and each of them larger than old plants generally are. The flowers under this treatment have not been seen, as the plant was not subjected to it till after it had flowered last spring, but in this plant the size of the flowers are regulated by the size of the leaves, and we may thence infer their size. The calla is perfectly adapted to ordinary house culture, as it is nearly hardy, and is really worthy the attention of all lovers of flowers.

TRY IT.

(From the Farmer and Mechanic.)

VINEYARDS IN OHIO.

Extract of a letter from N. Longworth to the Editor.

I have nine vineyards producing grapes, but shall only make wine the present season from five of them. I shall confine my observations to the one at which the wine was made, of which you drank at our late Agricultural Fair. It consists of about four acres, situated on a high hill, exposed to the east, south, and north, about four miles from this city, and one mile from the Ohio river. The ground on the south side of the hill, was trenched three feet deep. Those exposed to the north were planted after deep ploughing. The summer has been unusually warm and part of it dry. The grapes exposed to the north, ripened better than those exposed to the south and east. The grapes generally were better matured than in any previous season. The must bore an egg (I had no such saccharometer) and I presume contained as much of the saccharine principle, as grapes in the same latitude in Europe.

It is a mistaken notion, that the grapes of Europe require no sugar—it is not even true of the grapes of the island of Madeira—true, they do not use sugar, for the article is too dear to add to their must, but they effect the same object, in two ways. The one is, to boil down a portion of the must one-half, and add it to the wine. The other is, to add one hundred gallons of brandy to two hundred gal-

lons of must, and use it in like manner. The boiling in one case, and the brandy in the other prevents fermentation. Pure brandy is then added at the different rackings, to preserve the wine, and give it a proper body. I am now speaking of the wines of Madeira, for to the French and German wines, brandy is rarely added.

I am entirely satisfied, that in making wine, there is no difference between the saccharine principle in the grape, and sugar from the cane. I made one season a fair experiment; I gathered a portion of grapes when at maturity, and added 20 ounces of good sugar to the gallon. I gathered a portion of the same kind of grape, at the same time, exposed them to the sun during the day, and housed them at night, till a large portion of the watery particles had evaporated, I then made them into wine, the must possessing an equal degree of richness, with that having the addition of sugar. After the fermentation was completed, there was no perceptible difference in the wine.

The reason why so many persons have failed in their attempts to cultivate the grape in the United States, is, because they cultivated foreign varieties. Let them depend on native grapes for a general crop, and try foreign grapes merely as matter of experiment, for they may find varieties that will succeed in our climate; but as a general rule, our climate is too moist for foreign vines. Let them also raise new varieties from seed. I have white grapes raised from the seed of black grapes. It is a mistaken notion, that we have no native grapes fit for the table. I have two varieties, that have not the hard pulp, usual in our native grapes, and equal as a table grape to the *Mensner*, or *Miller's Burgundy*. I had several bunches this year weighing upwards of a pound, and one (produced on a vine that had several other bunches weighing a pound) that weighed one pound and a half. I believe no foreign grape, cultivated in the United States in the open ground, has exceeded it.

Many who have made wine in the United States have failed, by attempting to imitate foreign wines in repute among us. To succeed, we must make American wines, and custom will make us prefer their flavor to all others. From the same grape, four or five kinds of wine may be made, by a mere change in the process of fermentation. It may be made red or white, rough, sweet, or dry, from the pure juice of the same grape. Major Adlum, who deserves great praise for his early introduction of the grape for wine, was compelled to imitate foreign wines in vogue among us, in order to insure a sale for his wines. To him we are indebted for the introduction of what he calls the *Catawba* grape.

I have expended large sums of money in trenching grounds, and cultivating foreign vines. Deep ploughing has, with me, answered all the purposes of trenching, and after cultivating two hundred varieties of foreign grapes, I have not yet found one worth increasing in my vineyards. The vineyard of four acres, above referred to, is planted in vines from five to six feet asunder, trained on stakes.—Some of the vines are too small to bear. My own estimate of the vintage was fifty barrels; my vine-dresser's, from sixty-five to seventy. The one-half of the product is his. For a portion, I gave him one dollar per gallon, as it ran from the press, for the balance he has refused eighty-seven and a half cents per gallon. I have been cultivating the grape twenty years, and the last nine years on an extensive and expensive scale for wine. I have merely learnt enough to convince me, that in the next half century, we shall make wines equal to the best in France, and furnish abundance for transportation. But we have much to learn, not only on the proper selection of grapes, but the fermentation and manufacture of wines. The vine-dressers who have come among us from the wine countries of Europe,

know how to cultivate the grape, but are totally unacquainted with the principles of fermentation.

The *Catawba* is superior as a wine and table grape to the *Isabella*, and matures its fruit better, though a less abundant bearer. We have native grapes in most of our states, could a selection be made, that would leave us little cause to regret that foreign grapes succeed so badly with us.

RURAL ECONOMY.

POULTRY HOUSES

Require no particular form or magnitude; because, the animal being small in size, there is no necessity for accommodating the shape of the house to its particular figure. Both terrestrial and aquatic poultry agree in requiring a dry and rather warm lodging; and they differ, in that the web-footed birds all roost on a flat surface, while gallinaceous fowls roost best at some height from the ground, on roundish horizontal rods or rails, of a size suitable for being grasped by their claws, but neither perfectly round nor perfectly smooth. All fowls, when in a state of incubation, require repose, to which darkness is favorable as well as solitude; and places where they can have these requisites must be provided for them, as well as separate places for fattening them; to which also solitude and darkness are congenial. Poultry of every description, while growing, are exceedingly active, and, in an artificial state, require a considerable extent of yard to enable them to take sufficient exercise for health. The variety of their food is also considerable, including not only animal and vegetable matter, but even, as a help to digestion, salt, sand, or small pebbles. As land poultry require a dry yard, so aquatic poultry require ponds; and, while the common hen will roost at the height of a few feet from the ground, the turkey and peacock prefer the highest trees. It must be evident from this variety in the nature of these animals, that every kind will require a separate house or compartment of a building, and that this house or compartment should be in four divisions; one for rearing, another for keeping full-grown fowls, another for incubation, and a fourth for feeding. For the first two of these houses or divisions, a yard for the purpose of allowing the fowls to take exercise and pick up food is essential, and in this yard there ought always to be an open shed for shelter from the sun or rain, abundance of sand, and small pebbles; and, for aquatic fowls, a large pond. The healthiest poultry of every description are those which are well fed in their yards in the morning, and allowed free exercise out of them the greater part of the day; and the fattest poultry are those which are confined in the dark, and not allowed to take any exercise. In all cases where poultry have not the free use of a large yard, they should have troughs filled with sand and small pebbles, placed so as to allow them to pick them when they choose, to promote digestion. These being the general circumstances connected with domestic poultry for architectural purposes, they may be classed in the three following divisions: viz. the web-footed or aquatic, which must necessarily, for every kind of treatment, be lodged on the ground floor; the common cock and hen, which prefer the floor above; and the turkey, guinea fowl, and peacock, which roost in lofty open sheds, or on trees. In small farms, therefore, all the different kinds of poultry may be lodged in the same house. Ducks and geese, with the other kinds, while rearing, on the ground floor; common fowls, when full grown, and while in a state of incubation, on the middle floor; and the turkey, &c. above. One yard may answer for the whole, provided it be sufficiently large, and contain a large pond. As warmth is highly conducive to the prosperity of poultry, common fowls are frequently lodged above cow-houses or stables, or even pigsties; and in other cases, when it is very desirable to cause hens to lay early in the season, their houses

are heated by fires. When, however, the house is of a construction well calculated to retain heat, and it is perfectly dry below, and has few openings above, and a roof sufficiently thick to exclude all frost, artificial heat can very seldom be necessary. When it is desired to rear chickens for sale very early in the season, the eggs may be hatched by hot water, or in a bed of tan, dung, leaves, or other fermenting matter; and, after being hatched, they may be reared under a roof of glass, which roof may be employed in the summer season as a covering for vines. At Bagshot Park, Surrey, there is a very extensive poultry establishment; and early in the season the fowls are reared in a vinery; and a writer in the *Gardener's Magazine* (vol. viii.) not only rears, but hatches, in a house of the same description. In the centre of the large yard at Bagshot there is a tree partially denuded of its branches, in order that it may serve as a roosting-place for the turkeys. In every poultry house the places for incubation are small stalls or boxes, eighteen inches for two feet square, and open in front, in which the fowls sit on their eggs, and, after these are hatched, they are taken out into the yard, and the mother is confined in what is called a coop, an inverted cup of wickerwork, with the interstices large enough to allow the young brood free egress and ingress, while the parent cannot escape. These coops are frequently boarded on all sides, with a grated door opening in front. Partridges, pheasants, quails, bustards, and other gallinaceous birds are sometimes bred and reared in artificial structures, with a view to their domestication or increase in any particular locality. When this is the case, it is necessary to enclose them above and on all sides by netting, to prevent their flying away; because these birds are not susceptible of perfect domestication.—*London.*

(From the Genesee Farmer.)

FATTENING HOGS ON APPLE PIE.

Stephen Titus of New Baltimore, fattens his hogs upon *apple pie*. So he told us to-day. Stephen Titus is of the religious denomination termed *Friends*, a pretty good guarantee for his veracity. But we want no guarantee; for we verily believe all he told us; and as we consider the facts valuable, we will give the narration in detail. I fill a potash-kettle, said he, with two parts of apples and one of potatoes, together with half a bushel of Indian meal or bran, and a sufficient quantity of water to boil the mass well. When boiled, I call it *apple pie*. It is then thrown into the swill tub, mashed with a mull, and the butter-milk and sour-milk of the dairy added, when it may be termed *apple pie and milk*.—Mr. Titus says he has used apples for years, and with great advantage in fattening hogs and neat cattle, both in a raw and cooked state; and that he considers an orchard even for these purposes, a valuable appendage to a farm. Friend Titus contrasted his management in this respect, with a neighbor who had cut down two hundred fine Jersey sweeting apple trees, as lumberers of the ground.

Mr. Titus' is the first experiment with cooked apples that we have heard of; but we don't see why cooking apples may not be an improvement, when given to high fed animals, as well as cooking corn and potatoes. An interesting fact was stated to us a few days since by one of the best farmers of our country, one who has probably collected more important data upon the profits of different branches of husbandry than any other. In a neatly managed experiment in fattening hogs, he alternated for some days with each kind of food, boiled potatoes and meal,—and hasty pudding. He found that the potatoes and meal made two pounds of live pork in each hog per day, while the hasty pudding made more than three pounds per day, we think he said three and a quarter or three and a half pounds, a conclusive evidence of the difference in food, as well as of the importance of having it *well cooked*—for proba-

bly the meal was not mixed with the potatoes till after they had been boiled.

Exert yourselves to overcome the difficulties attending your present business rather than enter into other pursuits.

MISCELLANEOUS.

(From the New England Farmer.)

LETTER FROM SQUIRE GRUNTER,

To the Hog Committee of the Agricultural Society in the County of Middlesex.

Gentlemen—In a letter addressed to your immediate predecessors in office, I had the honor to express, at some length, my views of the comparative merits of your species, and my own. The flattering manner in which my epistle was disposed of, makes me bold to renew the subject, and to add some further hints.

I must in the first place express my astonishment that you could ever have taken it into your heads to imagine yourselves our superiors. My first ancestor was *tramping up the soil*, before you saw the light. We remain as in the beginning, having never fallen from our first estate. Will you say as much for yourselves? you not only admit, but insist upon and contend for, all sorts of depravity, from very great to total; some of you maintaining that it is your very nature always to do wrong, and others that it is only a way you have got! Have the most expert shanderers among you ever accused us of any thing so bad? Compare your own acknowledged crimes with all you have ever charged upon us, and say whether the tenants of your State prisons ought not to outnumber the inmates of your hogpens.

First, you have the assurance to charge us with *obstinacy*. And where is the semblance of proof to support the charge? We sometimes differ from you in opinion, it is true. But which is the obstinate party is the question. The truth is, you always have your own way right or wrong; and because we cannot help giving you an occasional look of mingled grief and disapprobation you presume to to call us *obstinate*!

Then again you seriously charge us with a *want of cleanliness*. I will have the candor to admit that we are not at all times equally attentive to our external appearance; but is it not most frequently owing to your neglect to furnish us proper apartments? Let your wives and daughters cook and eat, and wash, and make soap, and sleep in one small room, without either floor or ceiling, and then say which of us would be called the most lovely?—A hog needs a parlor as much as any body else; give him one, and you will find him *there* at all proper hours, as fit and prepared to see company as the best of you.

We are next charged with being *gluttons*. And here again I will be frank and candid. We do indeed hold it a sound maxim, that a hog should eat all he can get—and we have generally found this a safe rule, which seldom occasions us any inconvenience; though, for *manners' sake*, we sometimes leave a part of our allowance. But, with the exception of this last circumstance, do you not do exactly the same thing? and like us, would you not gladly eat more if you could get it?

One word as to *drinking*. Just read the histories of men and hogs, and compare them. Do you find that we had ever any license law to enable us to get drunk for the public good? Do you read that we ever posted as drunkards, a set of hogs, otherwise respectable? Have you ever known a guardian appointed over one of our number, for excessive drinking, gaming, idleness or debauchery? or that guardian removed from office for the cause of intemperance? but I forbear. I know you

have at last begun to follow the example which we have so long set you. I am heartily glad of it; I trust the time is soon to come, when a drunken man will be as strange a spectacle as a drunken hog; and when the sight of a swill pail will not necessarily be associated with the idea of a rum jug.

In travelling through your county, I have observed your orchards, and have thought you might be in need of some of our bristles. A *tar brush* applied to your trees in the winter and spring would soon rid you of the cankerworm; and *Pickering's conical brush* would exterminate the caterpillar. By the way, I cannot but commend your practice of setting your apple trees so that the fruit may fall into the road, as it is exceedingly pleasant and refreshing to us on our travels.

I have it in contemplation to publish a new work, entitled, "*My strictures on men and things*." With this view, I have kept a diary on my travels to collect the materials, from which I beg leave to give you a short extract as a sample:

"Arrived at Worcester, quarter past 5, P. M.—good deal fatigued—plenty good corn—ate hearty supper and went to bed—dreamt I was in the centre of population—supposed I had heard somebody say so—waked up—heard somebody snoring—gave me the fidgets—turned over and grunted twice. Slept late in the morning. Went to see the cabinet of the Antiquarian Society—man there wanted to cut my tail off—told him he had done with it—too modern—do better next year.

"Two minutes past 10, A. M. left Worcester, tail and all—determined to go the whole hog—obliged to take the turnpike—no other road to take, runs over all the hills—very pleasant and slightly—good deal of land both sides—dined at Westborough—plenty of good corn.

"Arrived at Farmington twenty-nine minutes past 6, P. M.—plenty good corn—plenty roads—suppose to accommodate travellers—almost one apiece—guide-boards few and not particular—take any road you please—just eight miles to any where—called on the chairman of the hog Committee—right glad to see me—treated me like a gentleman—suspect he is better than he looks for."

With great respect for your society, and high personal consideration, I have the honor to be your most devoted fellow mortal. Porcus.

A Yankee Description of the approach of Winter.—The annexed remarks are copied from the Augusta, Maine Journal.

"Winter is approaching us from arctic realms; already is striding over the northern hills, and puffing down upon us his icy breath. He is preparing to spread his fleecy mantle over us. His emissary, Jack Frost, has been prowling about for some weeks, generally committing his depredations in the night time, nipping the tender herbage, and occasionally seizing a stray pumpkin, or a lot of turnips left in exposed places, making small pigs he close together to keep off the common enemy, and biting the toes of poor children who have no shoes nor stockings. Such there are, and they must be helped. Let those who walk out with cloaks lined with fur, and pockets lined with cash, or who sit at home in comfortable parlors, and listen complacently to the rustling of the leaves without, and the heavy roar of the north wind, remember those who have neither cloak, cash, nor comfortable home; perhaps not even bread. And let the lazy bestir themselves, and the drunken forsake their cups, and provide for their families."

UNIVERSAL EDUCATION, if it were practicable to enforce it every where, would operate as a powerful check upon vice, and would do more to diminish the black catalogue of crimes, so prevalent, than any other measure, whether for prevention or punishment, that has hitherto been devised.

Prices Current in New York, December 11.

Beeswax, yellow, 21 a —. Cotton, New Orleans, 13 a 14; Upland, 11 a 12; Alabama, 12 a 14. Cotton Bagging, Hemp, yd. 20 a 22; Flax, 18 a 19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, 14.00 a —; rough, 11.75 a —. Flour, N. York, bbl. 5.00 a 5.75; Canal, 5.36 a 5.51, Balt. Howard st. 6.25 a —; Rhd city mills, 6.75 a 6.85; country, 5.75 a 6.00; Alexandria, 6.00 a —; Fredericksburg, — a —; Peterburg, — a —; Rye flour, 5.75 a —; Indian meal, per bbl. 3.62 a 3.75, per bbl. 16.50 a —. Grain, Wheat, North, — a —; Vir. 1.15 a 1.18; Rye, North, 75 a 80; Corn, Yek. North, 50 a 74. Barley, .65 a .67; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Potatoes, Beef, mess, 8.75 a 9.00; prime, 5.50 a 6.00; cargo, 5.50 a 5.75; Pork, mess, bbl. 14.50 a 15.25 prime, 10.50 a 11.25; Lard, 10 a —.

BOLTON FARM, NEAR BRISTOL, PENN.

To be Rented.

That part of Bolton farm which is in the occupation of the present tenant, containing one hundred and twenty acres of land, more or less, including the tenant's house, one of the best barns in Pennsylvania, an orchard of five hundred apple trees of the best fruit, cider press, mill, &c. &c. will be rented to a tenant who can be well recommended as a suitable person to provide and keep on the farm, only the best selection of every description of stock, and who is capable of managing a first rate grain and dairy farm. The object of the proprietor is, to introduce into his neighborhood the practice of raising exclusively, the best of every description of stock, for which purpose Bolton farm is well adapted by the proper proportions of meadow and upland, its conveniences for summer and winter, and its position for facility of transportation by the Delaware canal, and Bristol and Philadelphia Railroad. For further particulars apply to the subscriber on the premises. JAMES P. MORRIS.

Dec. 20, 1833.

21.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 2d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

J. I. HITCHCOCK,

American Farmer Establishment.

CLOVERSEED-AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

J. I. HITCHCOCK.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price for it. Address

J. I. HITCHCOCK,

Amer. Farmer Establishment.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

J. I. HITCHCOCK,

American Farmer Establishment.

JACK.

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address

J. I. HITCHCOCK,

American Farmer Establishment.

A good Jenny is wanted by the owner of this Jack.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

J. I. HITCHCOCK.

RAMS AND EWES.

One Ram of last spring's yearning, of the purest Bakewell blood, at \$75.

One do. one and a half year's old, with a defect at \$50.

Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.

These beautiful and valuable animals, may be had by application to

J. I. HITCHCOCK,

American Farmer Establishment.

*His testicles are *abrams* up in his body—in every other respect he is a very fine ram.

NEW CHINESE MULBERRY.

(*Morus Multicaulis*.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

J. I. HITCHCOCK.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

J. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.60; do. ground leaf, 5.00 a 9.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00—Virginia, 4.00 a —Rappahannock, 3.00 a 4.00.—Kentucky, 4.50 a 5.00. The inspections of the week comprise 352 bbls. Maryland; 49 bbls. Ohio—total 381 bbls.

Flour.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5.50 a —; (wagon price, 5.25 a —) city mills, 5.25 a 5.34; city mills, extra, 5.62 a —. CORN MEAL, for domestic use, 1.31 per 100 lbs.: do. yellow kiln dried, 3.25 per bbl. and 14.00 per bbl.—GRAIN, red wheat, 1.00 a 1.10; white do 1.15 a 1.20.—Corn, old yellow, 50 a 51; white, 50—in the ear, — a — per bbl.; Rye, 65 a 67; chop rye, per 100 lbs. 1.50 a —. OATS, 35 a 36.—BEANS, 1.50 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—CLOVERSEED, 4.75 a 5.75; TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —. Lucerne 37 a — lb.—BARLEY, — a —.—FLAXSEED, 1.62 a 1.75.—COTTON, Va. 13 a 14; Lou. 15 a 16; Alab. 13 a 15; Tenn. 13 a 14; Upland 13 a 15.—WHISKEY, bbls. 1st p. 27 a —; in bbls. 25 a 29.—WOOL, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 37 a —. Plaster Paris, per ton, 3.87 a —; ground, 1.37 a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.00 a 5.50.—Oak wood, 2.75 a 3.50; Hickory, 5.00 a —; Pine, 2.50 a 2.75.

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Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, DEC. 27, 1833.

REFLECTIONS.—What means this bustle in the streets of our quiet city? There is a general movement past our window of a multitude of persons, who all seem to be going in the same direction, and who, with a quickened step and with animated countenances, are conversing with more than ordinary earnestness, as if something unusually pleasant was exciting them. Old and young, male and female, white and colored, make up the throng, who seem intent on some purpose of absorbing interest; and, as they progress, the broad laugh, the obscene jest, and the expressions of general merriment indicate that they are hastening to gratify their senses with some amusing spectacle, some holiday treat. Ha! it breaks upon us—they are on their way to an execution! to witness the dying convulsive struggles of two wretched culprits at the jail! Is it possible! And are these the indications of the salutary effect of public executions? Is this the evidence of the "solemn warning to deter from crime" intended to be conveyed to the thoughtless and the vicious? Alas for the erring judgment of the wise men of the earth. Look on the motley group assembled around the spot, and the awful preparation for the barbarous exhibition. Harken to their conversation; note the indexes of their minds, and then say whether the theory of the advocates of public executions is correct, or whether it is not, on the contrary, one of the most absurd that ever possessed the intellects of sane men. Instead of being salutary, we confidently aver, that public executions are the most debasing, the most hardening in their effects upon those who witness them, that could be devised: nay, we are confident, that if it was desired to produce the very reverse of the effects intended, no means could be contrived more effectually to accomplish this purpose, than the public hanging of a human being by the neck till he is dead.

But to dismiss the disgusting subject of public executions, let us reflect for a moment on the necessity and expediency of capital punishments. And first, what is the need of them? Certain it is, that those who will not respect the rights of life and of property must be restrained; and we are free to admit the right of society to protect itself against the depredations of the ill-disposed by any necessary means, even to the taking of life. But may not this be done in most cases without taking life? Do not our laws inflicting punishments, especially that of death, contemplate rather vengeance upon the offender than the protection of society? It seems so to us. The former of these principles is one which, if universally acted upon, would convert the earth into a field of blood. There would be no end of the succession of punishments if vengeance was suffered to prompt to them; and if this rule would not do for a universal one, it is neither safe nor just in any instance. Indeed the vengeful principle has been condemned and exploded by good men in all ages, and is utterly unworthy of the approbation of all who approve of the golden rule for our actions, and who can see that this universal practice of benevolence would make all men happy. If, then, not vengeance against the offender, but the protection of life and property is the legitimate object of punishments, (we would rather say restraints) would it not be more politic as well as more just to confine unruly members of society in some secure place, and compel them to labor for the reparation, as far as practicable, of the injuries they have caused, than to deprive them of life? For instance, if a man has murdered a member of the community on whom a family was dependant for

subsistence, let us not murder him in return, and thus perhaps deprive a second family of its support, but let him be confined, (in solitude, or not, according to circumstances,) coarsely, but competently fed and lodged, and let him be compelled to labor to the full extent of his strength, and out of the avails of his toil let first his own expenses be paid, and then let the balance of his earnings be directly applied to the support of those whom his crime has deprived of a provider. This labor should not be reckoned as a part of his punishment, for it would be rather an alleviation than an enhancement of it; but it should be exacted of him in part payment of the awful debt he would owe society. Would not the certainty of such a punishment be more likely to influence bad men than the taking of life? Assuredly, it would not be less so.

The only exceptions to this course or method of restraint should be the cases of those disturbers of the welfare of society who have influence over the minds of other men sufficient to endanger their safe keeping in a prison. Traitors to the state, and usurpers of its power who, perhaps, have an army or other formidable body of men devoted to their interests, would not be safe in a place of confinement, however strong. Such should, therefore, be put to death; not as a punishment or vengeance for their mischiefs, but for the safety of the community; not in reference to themselves or their crimes, but entirely in reference to the necessity of the measure, as one of public security.

STINGLESS BEES, SISAL HEMP, &c.—We have had occasionally to speak, in our previous numbers, of the "stingless bees of Mexico," and of the praiseworthy efforts of Dr. Henry Perrine, U. S. Consul at Campeachy, to introduce them into this country. This enterprising and public spirited gentleman has just sent to Mr. Dickelut, of this city, two hives of these bees, which, we much fear, have shared the fate of all that have hitherto been sent—that they have perished during the passage.

Dr. Perrine has been for a long time actively engaged in endeavoring to turn the attention of his fellow citizens to the culture of various fibrous-leaved plants, for the manufacture of cordage, &c. The plant most spoken of for these purposes is the Sisal Hemp, a species of Agave, distinct (he thinks) from *A. Americana*, and which he proposes to designate as *Agave Sisalana*. The country name of the plant is Henequen, (pronounced Hane-a-kane,) of which there are two varieties—Sacqui and Yashqui, (*Sack-kee* and *Yash-kee*.) In order to afford us an ocular demonstration of some of the useful purposes to which the fibres of these plants may be applied, the doctor has sent to Mr. Dickelut several hawmooks of the coarser manufacture, and two fine ones as presents to the President of the United States.—These latter are really a beautiful fabric: one of them is made of a different species from those mentioned above, called Pita, (Pee-ta.) The fibres of this species are fine, soft and smooth, beautifully white, and of great length. Some specimens of the fibres, which have also been sent, measure upwards of six feet in length. Specimens of these articles may be seen at our office.

We shall return to this subject on some future occasion. We will, however, take this opportunity to state, that Dr. Perrine is ready to furnish, for a reasonable compensation, specimens of natural history for herbariums, &c. Orders for such matters, if left with Mr. Dickelut, at our office, within eight days, will be immediately forwarded to Mr. Perrine.

An eccentric preacher, in his address to his congregation, lately observed that "there is as much chance for a drunken man to inherit the kingdom of heaven, as there is for a pig to climb up an apple tree and sing like a nightingale."

This good rainy Sunday, Dec. 8, 1833.

MR. HITCHCOCK:

Dear Sir,—Excuse the delay in not forwarding the amount of the subscription to the American Farmer sooner. I don't say pay, because I consider it worth more than five times five dollars to any farmer who is disposed to read and profit by the information of others better informed.

I believe this is only the third year that I have been a subscriber to your valuable paper, and two years since I commenced farming at my present residence. (You must know that your humble servant was lately sheriff of — county;) and it's the general talk in the neighborhood, and with travelers passing this way: "What a wonderful improvement he has made in that farm. When he came on it, only a year or so ago, it was terribly out of order: the fencing all down—the buildings a perfect wreck—the meadows grown up in bushes—the ditches filled up; and now see, in the short time he has been there, what a change—the buildings all fitted up in good order—the fences new—the yard and garden neatly paled in—the gates on the hinges—the meadows cleaned up—those old ditches cut out and carted on the upland. Why, it's the prettiest farm in the neighborhood; and, with all the sources of improvement at hand, he will make it in a few years very productive."

They want to know how I have accomplished so much in so short a time. I tell them the whole secret is, in staying at home with my hands, drinking no whisky, nor suffering it to be used by any person on the premises; that if any hand in my employ is found with a jug of whisky or rum, his wages, if any due, is paid, and he is immediately discharged; and that I take the American Farmer, which every farmer should do: and to encourage them to do so, lend them my papers; and they are now scattered around the neighborhood, but to no purpose: every body goes on the same old way, without the smallest change. I have been at home almost two years; and this fall concluded to take a trip to the north, to look at the good lands there; and to the east, to see some of their little notions, intending also to visit Baltimore, and pay my respects to you personally. But the winter set in early; and, like the wild goose, I was glad to return to where I was hatched. My head is now full of the west, and I expect to start in the spring on a three months' trip. You will say farmers have no business running about; they should stay at home; which is all true—but my wish is to change my residence. After my present year's subscription expires, discontinue my paper until you hear from me again.

When I sat down to write, I intended to make an apology for not sending the money sooner, and there stop; but wishing to say something of the benefit derived by a poor ignorant forester, in being one of your subscribers, have spun out a pretty long yarn all about nothing. Had my education not been confined to a few short winter months, after a hard summer's work on a farm, (my father was a tenant,) I perhaps should have been scribbling away with some of my clodpole friends in the Farmer.

Yours, very respectfully, N. C.

MARCH OF IMPROVEMENT.—The celebrated mathematician Hoene Wronski, is said to have discovered a new system of steam engines, applicable to carriages on common roads, and all other locomotive instruments, such as ploughs and other implements of husbandry and of war. It is represented to be so vastly superior to any thing of the kind that has preceded it, that a French Company has paid four millions of francs for the patent.

* Not at all—we say no such thing. "There is a time for every thing," and occasional jaunts abroad are no less serviceable to farmers than to others. As to changing a man's residence, that is a matter of which he ought to be, and no doubt is, the best judge.—*Ed. Am. Farmer.*

AGRICULTURE.

(From the Farmers' Register.)

ON DRAINING.

Addressed to Young Farmers.

There is no one branch of practical farming which is more generally misunderstood or neglected in Virginia, than draining. The dryness of our climate, and the small proportion of our soils that are both level and of a retentive nature, cause this evil to be limited in its injurious effects, and to attract but little notice, compared to other defects in our husbandry. It may, and probably is the case, that many of our good farmers understand correctly the principles of draining wet lands, and execute the different requisite processes in an efficient and economical manner. But such cases are very rare in comparison to the many who are deficient both in theory and practice. It therefore seems to me, though not claiming to possess much knowledge on this subject, that even my imperfect views and experience may be serviceable to young farmers, and bad farmers—and let it be understood that my observations are designed for no others. Good farmers are requested to pass over the pages of the Farmers' Register, which my desultory remarks may occupy, and to pardon the writer for so occupying them to their loss. Another apology may be due to my readers, for the unpolished form and manner of my writing: if so, I will make it now, and then be done with apologizing. In the first place, I have barely time to write even hastily and carelessly, secondly, my matter will not be of a kind to deserve much labor in embellishing, and lastly, perhaps with all the pains and care I could bestow, I should not make it appear much better.

Drains or ditches are required for three different purposes, as follows: 1st. For collecting and discharging surplus rain water on land which is generally dry. 2d. For conveying streams. 3d. For collecting springs oozing from the hills, and diverting their course from the land below.

Ditches of the first kind, of which I shall now speak, are the easiest to make and keep in order, and are generally either omitted altogether, or made at double expense, to serve but half their purpose. A drain is required wherever there is a narrow depression of the surface of any land nearly level, in which the water of heavy rains collects and remains until it slowly passes off at the lower extremity, or soaks into the earth. Unless the loss of crop from such a cause is almost certain, and the space of an extent too great to lose, it is generally left to take its chance for a dry season, or gentle rains—by favor of which, the sink may sometimes remain dry enough through the summer.—But usually, from the excessive wetness, it costs double labor to till, and produces either a scanty crop, or none. When a ditch cannot be dispensed with, it is commonly cut by the spade through the middle of the sink to its outlet, and the earth thrown on one or both sides of the ditch, in little separate hillocks, to let the water pass between them into the ditch. Every cleaning out of the ditch helps to convert these separate hillocks into a continued bank on both sides—and that end is still faster reached by the soil being turned towards the ditch by every ploughing, as horses do not (and cannot safely) cross such ditches with the plough. The trouble of stopping and turning the ploughs on reaching the ditch, and the margin thus lost or damaged on each side, amount to a serious disadvantage, even while the ditch serves properly as a drain to the adjacent ground, but in a few years that good is nearly or quite forfeited, by the margins of the ditch being so raised as to bank out the water, unless other means are used to prevent.

Nearly all the trouble and loss caused by this

slovenly mode of ditching, may be avoided by using the *plough* in a proper manner to make and repair such drains. Mark off the middle of the sink, through its whole length, and with whatever crook its course may have. Then plough a 'land', the sides of which shall be parallel to and equidistant from the middle of the sink, and of course on that line will fall the water furrow made by the finishing of the ploughing. The width of the 'land' so ploughed may be from 10 to 30 yards wide as a shallow or deeper drain is wanting—and very often, a single deep ploughing, with a careful running of the last furrows, will serve to drain the sink as effectually as a new ditch cut by the spade. In this case, the work costs almost nothing—as the ploughing should be given when the field is in the course of being broken up for a crop. If the mode of cultivation is in ridges crossing this drain, an additional ploughing of the same land should be given immediately, which will doubly deepen the water furrow for the drain. But if the field is kept under flat cultivation, or in wide beds, that additional ploughing will scarcely be needed, as the drain may be easily and conveniently kept open, by ploughing out a similar 'land' wherever the field is broken up. Whatever may be the mode of cultivation, the ploughs will cross this drain without the least difficulty, and there will be no land lost to cultivation. The ditch will scarcely be observed, (being merely a water furrow,) but in fact, the land on each side after a few years, slopes gently towards it for 10 yards perhaps, so that it is actually a drain of 20 yards width. The earth carried into the furrow by ploughs running across will scarcely fill it too much in the tillage of a crop of corn: but if necessary, the earth so carried in, is easily thrown out by shovels, and may be scattered over the widely sloped margins, without fear of raising a bank.

The poor level ridge lands, below the falls of our rivers, are full of shallow basins, which though often dry in summer, are ponds of rain-water all the winter and spring. These ponds are usually in a line along a wide shallow depression, descending towards one of its extremities. As the wetness of the earth, and the roots of trees (when the land is first cleared) would forbid the effectual use of the plough in such places, a narrow ditch must be cut with spades, and brought from the lower outlet, through the middle of the line of ponds, so as to draw off all the standing water. But as soon as the land is fit to receive good ploughing (which will be by the beginning of the next course of crops,) a broad land as directed before should be marked off, taking the ditch as its middle, and ploughed out. The closing furrows will be probably as low as the bottom of the old ditch, and sweep away all appearance of it, and leave it passable by ploughs and carts, though more serviceable than when it was a barrier to the passage of both. In short, in all situations of this kind, the plough seems to efface the ditches, while it renders them most efficient. The superiority of these drains, in cheapness and efficiency, to those cut in the best manner by the spade, may be easily conceived, by supposing a piece of flat and wet soil to be thrown into wide and high beds with clean deep water furrows, in the usual manner, by the plough—and compared with similar lands ploughed level, and then divided into beds by narrow trenches being dug between with spades. Every piece of well bedded flat land has in every water furrow such a drain as I have recommended.

In bedded level land, there will be many slight depressions, which even when so shallow as to be scarcely perceptible, will hold water after heavy rains, and destroy the growth of winter crops. If the beds prevent the opening of drains across entirely by the plough, at least it may commence

and forward the spade work for these places.—These grips (as such temporary drains are called) should be opened only a little deeper than the water furrows which cross them, as soon as the field is sowed in wheat. They may be quite effectual as drains, without being wide or deep enough to obstruct the future ploughing of the field.

The next kind of ditches are carriers of streams, and serve to drain the adjacent land by sinking the level of the stream in ordinary times, and more or less preventing its overflowing its margins, when swollen by rains. These ditches are required in almost every alluvial bottom, formed by, and subject to the inundations of streams passing through: unless the body of water is too great to be manageable by such means.

The streams in lower Virginia may be divided into two kinds: 1st. Such as have so little fall in their course, as to form *swamps*, by overflowing, or at least saturating with water all the low-grounds during the winter and wet seasons, and thus making the land a worthless quagmire at all times. 2d. Such as have enough fall to leave the lowground firm and even dry, in ordinary times, except where injured by springs, or other water than that conveyed by the main stream.

The first class of streams are much the most important, on account of the many extensive bodies of swamp land which remain not only worthless, but nuisances in several respects, and particularly as nurseries of disease, though no lands are richer, or could be brought into profitable use and cultivation, so easily and cheaply, compared to the great gain that would be obtained. Still, it will be unnecessary for me to treat on this branch of draining at length. In this point only, there is nothing to object to as faulty in the practice of individuals, for our laws (indirectly but effectually) forbid all such extensive drainings—and thus, our government shows a degree of negligence or stupidity—(it deserves no milder name)—which surpasses all of which evidence can be found in individual operations. When our country was first settled, it seems probable that these swamps were comparatively dry, and the streams unobstructed, except by the dams constructed by beavers. But every operation of our civilized population has served still more to raise, obstruct, and stagnate the waters. The only profit yet drawn from the swamps, has been by getting lumber from the large cypresses and other timber trees. In cutting down these trees, their tops are very often thrown into the course of the stream, where each serves to catch all the leaves and other floating rubbish, until it forms a dam, and raises, and often diverts the stream, to a new bed. The current is at no time sufficiently strong to remove such obstructions, although it may be spread over a flat of half a mile in width—and every one remains, until covered over with a deposit of mud. The law permits any land owner to add to these obstructions at his will—but (in effect) refuses the right to use the only means for bringing into profitable culture these great tracts of rich land, and of restoring health to the neighboring farms, which they now infect with bilious diseases.

Notwithstanding the great extent of overflowing waters on these flat swamps, the supply is much smaller than it appears, and they could be removed and kept within safe bounds by opening a canal from the outlet below, through the whole course of the swamp, as straight as the form and inclination of the land would permit. Level as such swamps are, there is plenty of fall for this purpose—and a ditch of 10 or 12 feet wide and 3 or 4 deep, would drain away the water which is now obstructed, inundates many thousands of acres. The expense of this central main carrier would be very inconsiderable, divided among all the owners

of a large swamp; and when finished, nothing more would be wanting to make the land dry, except the small side drains to intercept the springs coming out of the highland, which each proprietor would dig for himself. The central canal being so nearly level might possibly be made also serviceable for winter navigation, by having temporary floodgates.

But cheap and profitable as such drainings would be, they are rendered impossible under our existing laws, because the concurrence of every individual owner of the swamp is necessary for the execution of the work. Blackwater Swamp (for example) is more than 60 miles long, including all its branches, and perhaps belongs to more than three as many individuals—and it is manifest, that from such a number, no such concurrence can possibly be expected, even if there were among them no minors, or life estate holders, neither of whom can legally concur. If by possibility, only a single proprietor opposed the scheme, while all the others were in favor of it, he alone might obstruct the execution. Nor is there any remedy to be soon expected. If three out of every four of the proprietors of any of these swamps were to be awakened to the importance and profit of such a general plan of drainage, (and I am sorry to confess that such is far from being the case,) and were to petition the Assembly for powers to make it, and to compel all to bear their share of the cost, the proposition would excite violent objections, and perhaps intolerant and unappeasable enmity to the scheme. Every small lawyer, in and out of the legislature, would be furnished with a most convenient theme. We should hear the plan denounced as an invasion of the "sacred rights of property," and the denunciation maintained by so many arguments, (or what would pass for arguments) that the advocates would be glad to retreat from the wordy inundation. But as plausible as such arguments may be, precisely such might be urged against opening the existing, or any roads, through private property, if we can suppose such a case possible as the country being settled and cultivated, without having a public road within its limits. Roads are cut through private property, without asking leave of the owner, and he is also taxed according to his property, to pay his share of the expense of construction. Sometimes it happens that the road for which a proprietor is so taxed in his landed rights, and on his purse, though beneficial to the public, is to him individually a source of inconvenience and of loss. Still these exceptions are properly considered as no objection to the general regulation, for the general good—and the lawyers raise no objections, because the policy is already sanctioned by law. But if all of lower Virginia had been one great swamp, held by thousands of individual proprietors, and which could be drained as easily as Chickahominy and Blackwater swamps now could be—according to our laws and to the arguments of lawyers, there would be no possible means, consistent with justice and the principles of our legal policy, by which this beneficial improvement could be effected.

But I have already said too much upon a branch of draining which was only intended at first to be named as a matter to be omitted. My purpose was to advise practical operations which each individual may perform—and I have allowed myself to digress (uselessly I fear,) upon what individual efforts are altogether forbidden.

Streams of the second class, having sufficient fall, are generally such as flow through a hilly country. The low grounds, or bottom lands, lying on the borders of such streams, form a large proportion of the best natural soils of lower Virginia. Indeed but few other soils are richer than these have been, or would be more productive, if they

had been properly managed; but the general treatment of such lands has been so injudicious, that they have yielded but little nett product, and in many cases have become nuisances, and a source of loss instead of profit. I allude especially to low-grounds on small streams, not exceeding the size sufficient for an ordinary mill. Some of the usual and barbarous practices will be pointed out for avoidance, and also because their effects now present some of the worst obstructions to a proper plan for drainage and cultivation.

The bottoms though which the streams run, have been entirely formed during past ages by the earth washed from the higher lands by heavy floods from heavy rains, and deposited so as to form a nearly level surface. Of course the greater part of this deposit has been made from the main stream, and at the times when it overflowed the whole low-ground. But it is not only during such floods that the operation is going on. At all times a shallow running stream is bringing down earth, and thus raising its own bed, until it leaves it for another and lower place, or when a flood comes, throws the accumulated sand out of its choked channel, over every place low enough to receive an accession.—Thus, by the tendency of the overflowing water to cover mostly the lowest land, and from the greater subsidence of the suspended earth, were the water is most deep and still, nature works continually to keep such lands level from side to side. Before the adjacent hills were cleared and subjected to the plough, there could have been no great supply of earth, except from the richest soil on the surface—and that was furnished slowly and gradually.

Rich as these narrow bottoms were, our fathers did not readily undertake to drain and cultivate them. Before this was done, the adjacent highlands had in most cases been cleared, cultivated and washed into gullies—and had served to throw upon the low-ground more of barren subsoil in a year, than it had before received of rich mold in ten. Nor was this injurious deposit brought down by the principal stream, and spread over the whole surface. It mostly was brought by torrents of rain water, which for a little time swelled the rivulet to a flood, and by which the sand or gravel was carried out on the rich bottom soil, in points projecting from the ravine through which the torrent rushed. These points of sand, by their thickness and poverty, now form one of the greatest difficulties in draining and cultivating the low-grounds.

The management of the neighboring highland, so far as its washing is promoted or prevented, is one of the most important things bearing on the alluvial bottom below. If no mischief had been already produced from this cause, the instructions that will be offered would be more simple, and yet far more serviceable. Prevention is always better than cure—and in these cases, the perfect cure is impossible. We have destroyed the greater part of the value of our low-grounds, before we knew their productiveness.

Next come the injuries inflicted directly when such lands are under cultivation.

Bottoms of the kind under consideration are generally from 150 yards wide, to the narrowest size worth draining—meandering continually in their course,—and having sufficient fall or inclination to give a rapid course to the natural stream, and to allow the land to be effectually drained for cultivation. The stream is still more crooked than the valley through which it runs, and is often twice as long as would be the straightest course that might be given. Nor is the course of the stream always though the lowest part of the land—for the margins of the stream are often the highest parts, owing to the more plentiful deposit of sediment when the overflowing waters first rise over their banks. The first error usually committed, is to leave the

stream (if a large one) in its natural crooked bed, instead of giving it a shorter course: the next is, to impede still more the course of the water by allowing thickets of briars and shrubs to stand on the edge of the stream, and every kind of rubbish to be thrown into it. The crooked and choked channel causes the stream to overflow with a rain that would not swell the current injuriously, in a clean and straightened bed, though of no more average width, and occupying not one-fourth as much land. The land lost is not only the bed and banks of the stream. A very crooked course makes it impossible for the plough to run in the same direction: and many points of land are formed too narrow to be worth cultivation. Hence a wide margin is left to grow up in thickets, and to harbor muskrats and other vermin—or to be kept cleared at more than twice the cost of proper cultivation. If the stream separates the lands of two proprietors, (as is one of our common follies,) the evil is far worse. If either cleans his margin effectually, and opens the stream, it will avail but little, while this neighbor uses no such care. In the meantime, with every heavy rain the obstructed current sweeps across the land, tearing away the ploughed mold, or covering it with its load of sand. The soil thus swept off serves to fill and render useless the cross drains made to convey the smaller streams. Every such flood saturates the soil with water to the great damage of the crop, and leaves the whole a picture of desolation.

Next let us examine the side, and cross ditches. In hilly and sandy lands small springs ooze out of the hills so frequently along the side of the low-ground, that there is almost always a necessity for a ditch on each side, to intercept them. The side ditches (unless they are covered or hollow drains, which will be treated of hereafter,) if bordered by cultivated land, are perpetually filling from the washing hillside soil: and the difficulty of keeping them open is still more increased, where they cross the points of sand brought down by former currents, and which are still increasing from every torrent of rain water. It is not strange, therefore, that the side ditches are seldom clean; and though they obstruct, they seldom entirely prevent the oozing waters finding their way to the low-ground. Where the valley is narrow, or the main stream small, one of the side ditches is often made also the main carrier, or channel of the stream. This is a great saving, if the ditch is straight enough, and so situated in other respects as to be kept open, and deep. But otherwise, the side of the low-ground is the worst location for the main stream.

Cross ditches are used to bring the water of a side ditch to the main stream, when it can no longer be continued down the side; or they lead from low places which though not exposed to spring water, would be made ponds by receiving the surface water from rains and floods, and would remain so until the water was soaked up by the absorbent earth. The beds in which the land is cultivated usually lead to these cross ditches, and their water furrows there vent the water that collects in them. As the cross ditches fill rapidly from the causes already stated, their repeated cleanings soon make a dike not only on one side, but on both, unless more judgment is exercised than is common. Then the ditch, when well open, may draw water from its head to its outlet; but not a drop can enter it along its whole course, so well is it deluged by the bank of earth on each side.

Now for the rotation and culture.

Lands of this kind seldom form but a small portion of a whole field, and are therefore not often put under a different rotation. Say that it is the common three shift rotation, or 1. corn—2. wheat—3. at rest. When the winter comes preceding the year for corn, the land has been two years without

a ditch being cleaned out: and if grazed, the treading of cattle and rooting of hogs, have been, aiding greatly to fill them up. If not grazed, the richness and wet state of the land have made it a wilderness of weeds and rubbish growth of all kinds. In the latter case ditching in autumn would be almost impossible; but even if kept bare enough by grazing, no farmer has leisure for a heavy job of ditching before winter. At all events, it is never done.—The land treated as I have stated is almost as wet as if no draining had ever been done—nay, it is often much the wetter for the work un-called draining. But little of wet ditching can be done in cold weather: so it is in March, before the old drains are opened. Still the land is very wet from having remained so long water soaked—and it is ploughed before it is dry enough, because the season is too much advanced to wait longer. Under such circumstances the land cannot produce near a full crop, even if the draining was then perfect, and continued effectual for the remainder of the year. During the following crop of wheat, the drains are filling, and seldom opened, and during the year of rest afterwards, the former water soaked condition of the land is completely brought back.

This picture does not in every particular apply to all such lands, even when most badly managed; but some of the traits will suit all, not excepting some in the hands of the best farmers: for in the management of low-ground especially, we often want the means to perform what our judgment directs should be done. For example—who is there who does not pronounce, when ditching in March, that he ought to have done the work in September? and who is there who profits by his own opinion and experience, so as to avoid the same error in future?

I now proceed to propose plans for draining and cultivating soils of this kind, all of which I have tried with success to such extent as was permitted by the situation of the land in my possession, and the circumstances under which it was placed.

It will perhaps be more plain to apply instructions to a particular case of common occurrence, than to attempt to embrace every variety of circumstance and difficulty. For this purpose, suppose the land under consideration to vary from 100 to 150 yards wide, the alluvial formation of a stream strong enough to turn a common mill, and which flows through in a very crooked channel in ordinary, and commonly overflows the whole bottom with every very heavy rain, or perhaps two or three times a year. The average descent of the stream and the land, from six to fifteen feet in a mile.—The soil a rich sandy loam. Subsoil various: sometimes layers of sand within reach of deep ploughing, sometimes of clay, and sometimes (though rarely) the rich black surface soil shows no change for several feet in depth. We suppose farther that the land has been cleared and cultivated long enough to give the plough generally a free passage.

Low grounds of the kind under consideration are in general more exposed to water from numerous springs oozing out of the adjoining highland, than from the main stream—and therefore the removal of the former first demands the farmer's care.—But neither the side, central, or cross drains can be finished, before the other kinds are in progress—and it will suit my arrangement best to speak first of the ditch or carrier of the main stream. The side drains require most skill and care, and their consideration will hereafter be undertaken. For the present, let it be understood that the side and cross drains are in the usual imperfect state of operation, serving to permit the imperfect cultivation of the low-ground.

The great object is to give the main stream the shortest and best course through all the extent of low-ground to be drained. With this view, the

shape of the ground, and the force and size of the floods should be well considered, and the new course for the stream determined accordingly. In general, it will be cheapest to adhere nearly to the straightest course—which in a crooked bottom, will cause the line to touch the projecting points of highland, first on one side, and then on the other. But desirable as are long straight stretches, we must take care to change their direction very gradually, when a change is necessary. In a long straight course, with sufficient descent, the water acquires a force which enables it to keep its direction, in spite of considerable obstacles—and will rush across, and fill up with its deposite, any part of its channel which turns off at an angle, or with a short curve. To avoid this danger, it will be sometimes proper to begin a gentle curve before reaching the point where it would necessarily be made. There is another ease in which straight courses should be departed from—that is, when with no great variation of direction, or increase of distance, the main carrier may be made to keep along the side of the low ground for a considerable distance, which will so far serve to avoid the trouble of another side drain, and also preserve the low-ground in one unbroken body, at that place. But desirable as it certainly is to have the stream kept at the side of the low-ground, it should not be done unless the location is good with a view to perfect drainage.—A ditch at the junction of the low and highland, is far more subject to be filled with rubbish and earth brought by rains, than if in the body of the low-grounds—and, therefore, if so situated, its course must not be too crooked, nor the force of the current too small, to guard against that danger.

When the line for the ditch has been fixed, it should be marked off by stakes wherever not plainly enough exhibited by some existing marks. It will be generally found that the line will divide the low-ground into large pieces, shaped something like segments of circles, the straight sides of which will be the new line for the stream, and the curved sides made by the hollow bends of the inclosing highland. The new line will probably cross in many places the serpentine bed of the stream.—The work should be commenced in the dry season, and on the driest parts of the land, if any are too wet for the operations required.

On a part of the new line, say from fifty to two hundred yards in length, and extending from the old stream at one place of crossing, to another, lay off with a plough, well and deeply, a *land* of about twelve feet wide, the closing water furrow of which will be the centre of the intended canal. This width of ploughing will be sufficient, if a passage for the water six feet wide and two feet and a half deep will serve; but the larger the canal is desired, the wider should be the ploughing. Such a stretch as is here spoken of, is supposed to pass through the body of low-ground. As soon as the plough has cut a few furrows, laborers with broad hoes begin to draw out the loosened earth, and to deposite it, with very little regard to accuracy, on the land outside of the ploughing. When the plough has closed its work and formed a deep water furrow, it begins again and goes over the same land, whether the hoes have finished ahead or not. A third time the same operations may be repeated, or until the ditch is either nearly deep enough, or the bottom has become too miry for the horses to walk on. In this manner, the greater part of the digging and removing of the earth may be done at a very small cost, compared to spade work. Still there remains something for the spades to finish. After the last ploughed earth has been drawn out, the ditch of the desired width (say five to seven feet) should be accurately laid off by a line, and by the stakes first set up to mark the course. A single spade's depth will generally give sufficient depth,

and the work will be very easy to perform. There is no need, generally, of digging low enough to divert at once the stream to the new course. It will be sure to take the new and straighter course at every rise of water, and will naturally deepen the new, and at the same time be filling up the old channel. This operation may be hastened by opening well the upper end of the new channel at each crossing place, and obstructing somewhat the old passage just below, by the top of a tree or other rubbish, which though serving to impede the floods, will not prevent the passage of the stream in common times. It would be improper to stop the water entirely from its old channel, as that would prevent its being filled up, and it would remain in the way of cultivation. But if a current has choice of two channels, united above and below, the one straight, and the other crooked and twice as long, the effect will certainly be, sooner or later, to deepen and enlarge the first, and to deposite its mud and sand in its slower passage through the second, until it is entirely filled. It is much cheaper to let nature thus aid your draining operations, than to dig the carrier at once as deep as desirable.

When the first rough part of the excavation, by ploughs and hoes, is finished through one stretch, it may be begun on some other—either adjoining, or distant, as may be most convenient. As the old channel for a long time will continue to convey the stream, it serves to keep the new work in different dry sections, to be opened as may be convenient. Adjoining sections should be connected as soon as possible (and by the spade if necessary) so as to have the benefit of any flood of rain that may occur.

When the main carrier is intended to be made for some distance along the margin of the highland, the earth must be thrown by the plough altogether towards the lowland. For this purpose, it will be cheapest to use a hillside plough, which by shifting the mould-board, turns the furrow slice to the same side, whether going up or down. If a common plough is used for such places, it must cut only when driven down the course of the valley, and be dragged back empty, to begin another furrow at the upper end of the stretch.

If the owners of low-grounds would act according to their true interest, this plan would be extended as far as the nature of the land required it, without regard to who might be the owner of any particular spot. Then each proprietor would be benefited by the drainage of the land below, serving as an outlet or vent for his own. But that is not now to be counted on, and each person must expect his drains to end with the lower termination of his land. If there is much fall in the stream at that place, the injury from this stoppage will not be considerable, except perhaps to the next land below. There, the water increased treble in velocity by its clear passage above, and finding no straight or sufficient channel below, will probably rush over the land, and expose it to all the damage which the owner will well deserve to sustain. If, on the contrary, the fall is inconsiderable, as in the swamps before described, the lower land-holder could render ineffectual the draining of the land just above. In such cases, a good vent to the water below is highly important, and the want of it may destroy half the benefit which might be derived from the whole drainage.

When streams are thus straightened, and their sides kept clean and smooth, they will carry off quantities of water that could not be kept within the former stream, even if four or five times the superficial extent. But I do not mean that inundations will be altogether avoided, though they will be comparatively rare—and when they occur, will be of short continuance.

But there is an objection (and unfortunately a

very general one) to all such schemes of drainage. Streams are generally made to serve as dividing lines between different properties, and that circumstance alone is sufficient, in most cases, to prohibit any rational scheme of drainage. When lands were first taken up under the old patents, and sold out without accurate surveying, a stream was a very convenient land mark, because it could not easily be changed or mistaken. But for the drainage and proper cultivation of the low-ground, the stream is the worst dividing line that could be fixed upon. All my foregoing directions on this subject must rest on the supposition that one person owns both sides of the stream—or that the different owners are willing to concur in the best general plan of drainage, and in the exchange of points of land cut off by the new carrier of the water. Either of these cases is so rare, that I must agree that the directions I have written are almost useless, and an unprofitable waste of the time of my readers, as well as my own. However, should I find that any value is attached to my suggestions, I may resume and finish my observations, as at first designed. It remains to treat of side drains, open or covered, intended to intercept springs having their sources in the highlands. R. N.

HORTICULTURE.

(From Lindley's Guide to the Orchard and Garden.)

RASPBERRIES.

The propagation of Raspberries is so well known to every gardener to be by suckers, that nothing need be said under this head; but the raising of a new plantation of stools is not by every one accomplished in the shortest space of time, and a collection is scarcely ever arranged so as to give all the sorts of which it may consist an equal advantage. In order to this, it is necessary that the respective heights should be known, to which the different varieties attain. This will enable the planter to arrange them to the greatest advantage.

This will be by placing the tallest growers at the back, the middle growers next, and the shortest growers in front. By this mode of arrangement, the shorter and middle growers will receive their due proportion of sun, without being interrupted by those which attain the greatest degree of elevation. The necessity of such an arrangement as this must be obvious to those who are aware of the advantage to be derived, in wet and cloudy seasons, in having this delicate and tender fruit fully exposed to the sun, and receiving a free and plentiful admission of air.

In making such a plantation as this, it will be advisable, if possible, to have the rows extend from east to west. These should be four feet at least from each other; and supposing one row only can be allotted to each sort, and that six rows are to form the extent of the plantation, then the first or north row may be planted with the *Cornish*, No. 9; the second with *Woodward's Red Globe*, No. 22; the third with *Red Antwerp*, No. 3; the fourth with *Yellow Antwerp*, No. 4; the fifth with *Cane*, No. 6, 7, or 8; the sixth with *Double Bearing*, No. 10, or 11.

The stools in the first and second row should be four feet apart; those in the third and fourth, three feet and a half; and those in fifth and sixth, three feet. In planting, young suckers should be made choice of; and if in plenty, three of these should be allowed to each stool, placing them in a triangle of six inches apart. If fruit are not wanted the first year, the plants will gain considerable strength by being cut down within six inches of the ground as soon as planted, instead of leaving them three or four feet high in order to obtain from them a crop of fruit.

In selecting the sorts for the above six rows, it is intended only to show their arrangement as far as regards their relative heights, not as a proper proportion of each; because a single row of yellow-fruited will not, by many, be deemed sufficient for five rows of red.

When a larger collection is intended to be planted out, the additional varieties may readily be placed so as to correspond with those which I have selected as a specimen.

After the stools are established, and fruit of the largest size acquired, care must be taken to select the strongest canes, and a few of these only from each plant, in proportion to its strength, shortening each to about four-fifths of its original height: these should be supported singly by a small stake to each. For general purposes stakes are unnecessary, as three, four, five, or six canes from the same stool may be tied together on their tip-ends: this may be done so as to give each cane a bow-like direction, which will give much more room for their laterals to grow than if tied up in a more perpendicular manner.

As a succession of this very favourite fruit must always be desirable in the dessert, it may be prolonged considerably beyond its usual time by cutting down some of the stools wholly to within a few inches of the ground, instead of leaving the canes at four-fifths of their length.

This operation may be practised upon both the Red and the Yellow Antwerp, as well as upon several of the other varieties, from which good crops of fruit may be obtained in August.

The double bearing varieties should have every alternate stool cut down annually: these will furnish an abundance of fruit so late as September, and in a fine warm autumn even to a later period.

As the finest and best of these fruits are, in all cases, the produce of strong and well-ripened canes, it becomes necessary that the stools should have every advantage afforded them. This may be readily effected by causing all the former year's canes to be cut down to the ground as soon as they have produced their crop, instead of allowing them to stand till the winter or spring: this removes an unnecessary incumbrance, and at a season when sun and air are of infinite importance to the young canes, consequently to the succeeding crop of fruit.

(From Lindley's Guide to the Orchard and Garden.)

CULTIVATION OF GOOSEBERRIES AND CURRANTS.

Gooseberries and Currants, when planted in the open quarters of a garden, require similar treatment; therefore such directions as are given for one may be strictly applied to the other, with but a very trifling deviation, which will be explained towards the sequel of this article.

Confining myself for the present to the Gooseberry, I must observe with regard to its early management, the reader will find some account of it under the head of *Propagation*.

In the quarters where the young bushes have established themselves, and made some vigorous shoots, the best placed of those should be selected to form the head: four shoots will be sufficient to begin with; these should be pruned back to six or nine inches, according to their strength and line of direction, from each of which three or four may be expected for another year. When these are pruned at the end of the second year, two of the best placed shoots from each must be selected, and pruned back to six or nine inches as before, cutting the others out close to the mother branch, thereby preventing the production of an unnecessary and useless number of shoots.

In the third winter, according to this method,

each young bush will have eight shoots when pruned, which will be sufficient to form the principal limbs of the full grown head.

In the fourth winter's pruning, the strongest and best placed shoot only should be retained from each branch, and that one pointing the most directly outwards, shortening it to six or nine inches as before, and cutting off close all the rest: this will give much more room to the branches, and produce a more open and handsome head, than if two shoots had been retained to each branch as before.

In the fifth pruning, should the head require a greater supply of branches, two shoots may be left, in the same manner as in the second and third year; and this practice may be continued, leaving either one or two shoots to each branch, as occasion may require, so long as the bush stands.

It must, however, be observed, that the older the bushes are, the smaller will be their leading shoots: these, of course, must be shortened in proportion accordingly; so that a bush of fifteen or twenty years' standing will rarely require its extreme shoot to be left more than six inches in length.

It is also necessary to bear in mind that the large Lancashire Gooseberries, and which are chiefly pendant growers, require to have much more space between their branches than the Champagne, and other upright growers: the former, therefore, ought not to have them much less than a foot apart, nor the latter nearer than nine inches, when the winter pruning is finished.

In the annual prunings, there will always be a number of shoots, and some, perhaps, of the most vigorous, produced from various parts of the head, particularly from the upper side of the diverging limbs: these must be cut off quite close and smooth, so as to remove entirely their bottom eyes, to prevent a succession of still stronger shoots, which would otherwise be produced; thus keeping the heads open, and consisting of fruit-bearing branches only.

When the spurs of gooseberries have borne fruit for two or three years, and become numerous, they should be thinned out, leaving the young ones only: by this means the fruit will have more room to swell, and its flavor consequently improved.

Currants, as was observed at the commencement of this article, when planted as open bushes, require a management but little differing from that of the gooseberry: this consists, chiefly, in leaving their shoots at a greater length in the annual prunings. In the dessert, the largest bunches have always the best appearance, and it rarely happens that they are not the best.

To obtain these, the bushes must be kept very thin of wood, clearing away all young shoots from the middle, as they are produced, and thinning out the spurs, leaving those only which are young, and at a few inches' distance from each other. The large white crystal Currant, thus managed, will sometimes produce bunches containing from twenty-five to thirty berries each.

The bite of a snake is as easily and as readily cured as the sting of a bee, if taken in a reasonable time, without even applying to a physician, as every farmer has a remedy in his own house. Bathing the part bitten with warm milk, affords immediate relief. An external application of hog's lard, with a diet of honey and milk, will have the same effect though not so speedily. These remedies should be universally known and remembered and resorted to as soon as possible after the infliction of the wound.—*Liverpool, Pa. Mercury.*

To PURIFY MUSTY CIDER.—A few slices of the red beet put into the barrel are said to deprive cider of any disagreeable taste or smell.

RURAL ECONOMY.

BIG HEAD IN HORSES.

Mr. HITCHCOCK: *Duncombe county, N. Carolina, }
December 1, 1833. }*

As you solicit your patrons to favor you with communications on all subjects connected with the spirit of your paper; and believing every thing in any way tending to shed light on the pathology and treatment of the diseases of that noble animal, the horse, would be acceptable, I take the liberty of forwarding the following hastily drawn remarks on the experience I have had in the treatment of a particular disease called in this country, Big Head. From my first notice of the disease, and from some *post mortem* observations, I am led to the opinion, that it is a morbid growth, of the spongy or honey-comb bone, that occupies in the upper jaw all that space from the eye to the nostril not occupied by the soft parts—and just under a thin lamina, or layer of firm bone, that covers the whole exterior of the head. The first symptoms of the disease are, sluggishness, downcast and weeping eye, declined appetite—after exercise, he places one fore foot in advance of the other and hangs his head down, he sweats for moderate exercise, he declines in flesh and his mune is high colored.

Now on a close examination may be noticed an increased size of the head, or upper jaw, occupying all the space from the eye to the nostril, sometimes on one side, sometimes the other, and not unfrequently on both at the same time. If the disease is unchecked, the horse gradually declines, he becomes so weakened in the loins, that he with difficulty gets about; the nostrils now begin to discharge an offensive sanious matter.

The head continues to enlarge, the irritation is communicated to the brain and destroys the animal.

Many persons here allow them to die, from the belief that the disease is incurable.

Others are in the habit of burning the head with a hot iron, so as to produce a large sore, and when deep enough to penetrate the outer bone, frequently perform a cure.

The cure in my hands, consists in the removal of a portion of the outer table of the bone, over the most prominent part of the enlargement, and establishing a drain from it.

A large incision to be made in the form of a cross, thus \times , and the bone exposed by dissecting back the different points. Then with a surgeon's trephine, or what I used in one case a common auger,* with a short blunt bit. A few turns of the instrument is sufficient to remove the bone. The wound should then be filled up with a cloth, wet in a weak solution of salt, or any article that will establish a suppurative inflammation. I used in one case, the diluted muriatic acid, one part of acid to eight of water, with much benefit.

As soon as the sores begin to matter freely, the stimulating dressings are to be discontinued, and the openings syringed out with warm soap suds, and the part dressed every morning with any simple salve, care being taken to prevent the part from healing up too soon. If inflammation should supervene, the animal should be freely bled, and the part often bathed in warm water. His food should consist entirely of herbage and green grass. I had two horses put under my care, by a friend of mine, laboring under the worst forms of this disease. I

* The operating with a common auger, may appear rough and uncouth to most persons, but when we reflect, that a trephine is often difficult to procure in the country, and that in that part of the animal's head no vital part presents itself, we consider ourselves justified in using any domestic instrument that will fulfil our intentions.

could have purchased both for \$25. They were so perfectly cured that one sold for \$100 and the other for \$125. I am inclined to the opinion, that the disease is mainly produced by blows inflicted on the head by careless servants, &c. H.

TO DAIRY WOMEN.

To prevent that rancid, nauseous flavor, which is too often prevalent in cheese, even when made of the richest milk, and which otherwise would be delicious, salt the milk as soon as it is taken from the cows. I mean the evening's milk, which is kept in pans during the night, in order to be mixed with the new morning's milk. The quantity of salt to be used on this occasion, is about a table spoonful to each gallon of milk, and is generally sprinkled on the bottom of the pan, and the milk poured upon the salt, and they soon become incorporated. This early salting has enabled many dairy women, whose cheese was before always hoven and detestably rank, now to produce excellent well flavored cheese, and on farms that had been pronounced totally unfit for the dairy system. To this small portion of salt, various good effects are attributed by those who use it; they say, it prevents the milk from souring in the hottest nights; that it encourages coagulation, and very much promotes the separation of the curd from the whey, which is a great saving. All dairy women ought also to know that it is a false idea, and a loss instead of a gain to the proprietor, to rob cheese of a particle of butter; and for these two reasons, because a pint of cream will produce more than triple the quantity of curd, that a pint of skimmed milk will give; and because a cheese, with all the butter left in it, will lose very little of its weight by keeping, whereas that from which the butter has been avariciously taken, will lose one-third of its original weight, in twelve months.—*Agricultural Repository.*

"An easy method of removing the taste of garlic or of turnips, from milk, and thus preventing it in Butter."

"As the dairy is found of much importance to the agricultural interests of the country, the following is offered to the public through the medium of your miscellany. The object of the present essay, is to avoid an inconvenience to which our dairy is subjected, and to convert it into an advantage.—The following plan is recommended, as a method of removing the garlic taste from milk, and producing sweet good butter, in place of that which is generally considered so disagreeable.

"When the milk is new from the cow, put one quart of boiling water into every gallon of milk; stir it through and put the whole into broad shallow dishes, so that it will not be above two inches deep. Let these dishes be placed on an open shelf, that the vapor may pass freely and entirely away.—When the milk has stood in this manner twelve hours, it may be put into the churn all together, or only the cream, as may be most agreeable to the taste or practice of the operator. Milk from cows that have pastured on garlic, when managed in this way, will be quite sweet. The plan here proposed is founded on analogous experience.

"The feeding of cows on turnips communicates a disagreeable odor and taste to the milk and butter; but in many parts of Britain they make excellent butter from turnip-fed cows, by a plan similar to the foregoing. The bad taste of the turnip consists in some volatile substance that is evaporated by the hot water. Garlic is much of the same nature, but probably more volatile.—Biscuit baked from garlicky flour, has no taste of garlic; but soft bread or pudding of the same flour, retains it strongly, having both experienced an imperfect evaporation."—*Monthly Magazine.*

MISCELLANEOUS.

To the Editors of the Alabama State Intelligencer:

I was favored a few days since, by a female friend, with the perusal of the accompanying letter, written by one of the most distinguished of our fellow-citizens, at the request of a mother who is his relative, for the instruction and guidance of her little son, who has been named after him.

Impressed with the excellence of the precepts which it contains, and convinced that those rules of moral honesty and that persevering energy which it so strongly recommends—illustrated and enforced by the successful and bright example of the writer—cannot fail to exert a beneficial influence over the intelligence and morals of young men, forming rules of future conduct, I solicited and obtained permission to have it published.

By giving it an insertion in your paper, you will doubtless render a valuable service to your readers, especially the younger part of them—and oblige
Your friend, &c. M.

P. S. Believing that the name of the writer would add weight and influence to the excellent principles inculcated by the letter, I have, with some difficulty, obtained permission to retain it, relying on the known disposition of the writer "to do the greatest good for the largest number," for the use which is made of it, without his consent.

Friscati, Sept. 16, 1833.

MY YOUNG FRIEND AND NAMESAKE:—When, in after time, you shall come to read the advice contained in these pages, for the governance of your conduct in life, you must accompany it with the recollection, that I did not assume the office of your mentor, in any spirit of officious obtrusion, but, in compliance with the request of your mother, whose heart is filled with the natural and noble desire, to stir you up to the emulation necessary to make you not only a useful, but a *conspicuous* man.

I know not whether I shall be able to perform the task which I have undertaken, in a manner calculated to attain so desirable an object; but, of this I am sure, that I shall attempt to do so with equal zeal and sincerity of purpose.

There is no reputation worth having, whose foundation is not laid in virtue. It may be truly said, that virtue is to a character what setting is to a precious stone: It sets it off in its best light, and causes the world to appreciate it at its full value.—Without the accompaniment of virtue, the most splendid talents and the highest attainments only make their possessor "a meteor of bright but transitory lustre," whilst, with it, they give him a light which is constant, uniform and lasting, like that of the sun.

I would exhort you then, by every consideration which can address itself to the human heart, to cultivate virtue as the basis of every valuable attribute of character; but, I need dwell no longer upon this point, because of the assurance which I feel, that under the auspices of your parents, you will not only have the best precepts instilled into your mind, but that you will see them beautifully illustrated by daily example.

I shall, then, take it for granted, that parental education and example will qualify your heart with all that detestation of vice, purity of purpose and practical integrity, which will give you the good opinion, the esteem, the confidence of the world.—But, there is a natural desire among all for reputation, for fame. How shall these be attained?—This question may be answered, in one short sentence, from an ancient author of great celebrity—"every man is the fabricator of his own fortune." The great orator Demosthenes, being asked, "what qualities would make an orator," answered, that three things were necessary: the first was *Action*,

the second was *Action*, the third was *Action*; so it may be said, that three things are necessary to make a distinguished man; 1st, *Energy*—2d, *Energy*—3d, *Energy*. He who aspires after fame, who wishes, after death, something more than the epitaph—that he was born one day and died on another, must set out in the very morning of life with a determined spirit of persevering industry. He must endeavor to soar above mediocrity, "with an eye that never winks, a wing that never tires." This course must be commenced in youth; for youth, among men, is what the spring is among the seasons, says Lord Bacon; and surely, the figure is most happy, for, where there is no blossom, there can be no expectation of fruit. And let me entreat you, not to be appalled at this prospect of labor, for the human mind if so formed, that we not only cannot be distinguished, but we cannot be prosperous—nay, we cannot even be happy, without some fixed employment, some object constantly beckoning to us, to pursue. This does not exclude occasional repose; far from it. But, whilst regular labor, with occasional intermission, makes us prosperous, and sometimes, nay, often distinguished, it at the same time, makes us happy; for, relaxation from labor is a great source of pleasure, whilst he who is habitually unemployed, becomes oppressed with ennui; and from that, there can be no relaxation. This course of industry and perseverance will qualify you for whatever pursuit you may choose, whether agricultural, professional, or otherwise; whether for private or public life.

If the circle in which you move, should be a private one, integrity and an educated mind will command the esteem of all who know you; and the industrious pursuit of your vocation, will give you "the glorious privilege of being independent." If your destiny carries you out of the private circle into the great one of politics, then, in addition to the esteem and confidence of your fellow men, and your own pecuniary independence, you will reap another and a higher reward—that admiration of the world which makes what we call *fame*, which may be said to be the universal desire of the human heart. Persius justly says, "that every man desires to be pointed at, and that it should be said, 'this is he.'" Should your destiny make you a public man, the virtue, of which I have just spoken, will make all the ends thou aimest at be thy country's, whilst, the industry, which I have endeavored to enforce, will have so enlarged your mind, as to enable you to comprehend the means by which these great ends may be obtained.

These are the ground works, the solid qualities, which I consider indispensable to making a man at all distinguished. There are many others which I would call ornamental as well as useful, which will contribute to smooth the rugged path of life, such as amiableness of disposition, benevolence, easy manners, politeness, &c. for which I would refer you to Lord Chesterfield's letters to his son.

There are two rules for practical life that I would especially recommend to your attention. The first is one recommended by Paley in his *Moral Philosophy*—"when you are called on to decide whether you ought to do a thing, and your mind, after deliberation, seriously doubts the propriety of it, never to do it." The second is, "whenever you are obliged to act in a case, where it is doubtful, which of two courses is the proper one, and one will promote your interest; and the other will operate the other way, decide against your interest." Thus, you will be free, not only from crime, but even from suspicion, and your reputation will remain as pure as the pendant icicle.

The foregoing principles and maxims are a brief abstract of those by which I have endeavored to regulate my own course in public and private life. How far I have succeeded, it is not for me to say.

It may be that I have failed; but still, I may answer the purpose of the guide-post which can point the proper road to the traveller, though it cannot travel itself. But there are not wanting many and illustrious examples, both in ancient and modern times, of self-made men, who by the observance of the foregoing maxims, and principles, have distinguished themselves, as much above all their contemporaries, as Achilles was above all the Grecian Heroes, and thus too, in every department of human knowledge, and in every pursuit in life.

Not to mention others, I will refer to a few examples only, whose biography is authentic, nay, some of whom were the contemporaries of our fathers; and first of all I will refer to Newton, of whom it has been said that he was a connecting link between men and angels; then to Franklin and Rittenhouse, eminent for their proficiency in Astronomy and Natural Philosophy; and, last, but not least, in reference to practical usefulness, and all the qualities which make a great and good man, our own Washington, of whom it may be justly said, as it has been said of another, that he was one of those chosen few whom both Minervas call their own.

Nothing can tend more happily to lead you on to the goal of a laudable, nay, a noble ambition, than to contemplate the virtues, and emulate the bright examples of such distinguished men, whose fame is not restricted to the narrow confines of their own countries, but is co-extensive with the civilized world. And let me exhort you to bear in mind, that if it should not be your good fortune to reach the full height of any of these illustrious examples, it is encouragement enough to animate you in the pursuit, to know, that continued effort will enable you to make continued approximation. That you may walk through life, the paths of virtue and intelligence, that you may ascend the steep of fame to their greatest height, and thus realize the most ardent and anxious desire of an affectionate mother's heart, is the sincere wish of your friend and namesake,

P. P. BARBOUR.

SPLITTING ROCKS.

In the granite quarries near Seringapatam, the most enormous blocks are separated from the solid rock by the following neat and simple process. The workman having found a portion of the rock sufficiently extensive, and situated near the edge of the part already quarried, lays bare the upper surface, and marks on it a line in the direction of the intended separation, along which a groove is cut with a chisel, about a couple of inches in depth. Above this groove a line of fire is kindled, and this is maintained till the rock below is thoroughly heated, immediately on which a line of men and women; each provided with a pot of cold water, suddenly sweep off the ashes, and pour the water in the heated groove, when the rock at once splits with a clean fracture. Square blocks, of six feet in the side and upwards of 80 feet in length, are sometimes detached by this method. Hardly less simple and efficacious is the process used in some parts of France, where millstones are made. When a mass sufficiently large is found, it is cut into a round form, several feet high, and the question then arises, how to divide this into pieces of a proper size for millstones. For this purpose grooves are chiseled out, at distances corresponding to the thickness intended to be given to the millstones, into which grooves wedges of dried wood are driven. These wedges are then wetted, or exposed to the dew, and next morning the block of stone is found separated into pieces of a proper size for millstones, merely by the expansion of the wood, consequent on its absorption of moisture; an irresistible natural power thus finishing, almost without any trouble, and at no expense, an operation which, from the peculiar

hardness of the texture of the stone, would otherwise be impracticable but by the most powerful machinery, or the most persevering labor.

LOSS OF WEIGHT IN COOKING ANIMAL FOOD.

It is well known that in whatever way the flesh of animals is prepared for food, a considerable diminution takes place in its weight. As it is a subject both curious and useful in domestic economy, we shall give the result of a set of experiments which were actually made in a public establishment. They were not undertaken from mere curiosity, but to serve a purpose of practical utility.

Twenty-eight pieces of beef, weighing 280 lbs. lost, in boiling, 72 lbs. 14 oz. Hence the loss of beef in boiling was 262 lbs. in 100 lbs.

Nineteen pieces of beef, weighing 190 lbs. lost, in roasting, 61 lbs. 2 oz. The weight of beef lost in roasting appears to be 32 lbs. in every 100 lbs.

Six pieces of beef, weighing 90 lbs. lost, in baking, 27 lbs. Weight lost by beef in baking, 30 lbs. in each 100 lbs.

Twenty-seven legs of mutton, weighing 260 lbs. lost in boiling, and by having the shank bone taken off, 62 lbs. 4 oz. The shank bones were estimated at 4 oz. each; therefore the loss in boiling is 55 lbs. 8 oz. The loss of weight in legs of mutton, in boiling, is 212 lbs. in each 100 lbs.

Thirty-five shoulders of mutton, weighing 350 lbs. lost, in roasting, 108 lbs. 10 oz. The loss of weight in shoulders of mutton, by roasting, is about 312 lbs. in each 100 lbs.

Ten necks of mutton, weighing 100 lbs. lost, in roasting, 32 lbs. 6 oz.

From the foregoing statement, two practical inferences may be drawn. 1st. In respect to economy, that it is more profitable to boil meat than to roast it. 2d. Whether we roast or boil meat, it loses, by being cooked, from one-fifth to one-third of its whole weight.—*Philosophical Magazine.*

EDUCATION.

The following extract is from an address delivered before the Zetosophic Society of the University of Pennsylvania, by Hon. Joseph Hopkinson, LL.D.

"The American parent does an injustice to his child which he can never repair, for which no inheritance can compensate, who refuses to give him a full education because he is not intended for a learned profession. Whatever he may intend, he cannot know to what his son will come; and if there should be no change in this respect, will a liberal education be lost upon him because he is not a lawyer, a doctor, a divine? Nothing can be more untrue or pernicious than this opinion. It is impossible to imagine a citizen of this commonwealth to be in any situation in which the discipline and acquirements of a liberal education, however various and extended, will not have their value. They will give him consideration and usefulness, which will be seen and felt in his daily intercourse of business or pleasure; they will give him weight and worth as a member of society, and be a never-failing source of honorable, virtuous, and lasting enjoyment, under all circumstances, and in every station of life. They will preserve him from the delusion of dangerous errors, and the seductions of degrading and destructive vices. The gambling table will not be resorted to, to hasten the slow and listless step of time, when the library offers a surer and more attractive resource. The bottle will not be applied to stir the languid spirit to action and delight, when the magic of the poet is at hand to rouse the imagination and pour its fascinating wonders on the soul. Such gifts, such acquirements, will make their possessor a true friend, a more cherished companion, a more interesting, beloved, and loving husband, a more valuable and respected parent."

Prices Current in New York, December 21.

Beeswax, yellow, 24 a —. **Cotton**, New Orleans, .12½ a 14; Upland, .11 a .12½; Alabama, .12 a .13. **Cotton Bagging**, Hemp, yd. 20 a .22; Flax, .18 a .19. **Flax**, American, 20 a 22. **Flaxseed**, 7 bush. clean, 14.00 a —; rough, 14.75 a —. **Flour**, N. York, bbl. 5.00 a 5.75; Canal, 5.56 a 5.81; Balt. Howard st. 6.25 a —; Rld city mills, 6.75 a 6.88; country, 5.75 a 6.00; Alexand'a, 6.00 a —; Fredericksburg, — a —; Petersburg, — a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.92 a 3.75, per hhd. 16.50 a —. **Grain**, Wheat, North, — a —; Vir. 1.17 a 1.18; Rye, North, .75 a .80; Corn, Yel. North, .70 a .74. **Barley**, .65 a .67; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; **Provisions**, Beef, mess, 8.62 a 9.50; prime, 5.62 a 6.00; cargo, 5.50 a 5.75; Pork, mess, bbl. 14.50 a 15.25 prime, 10.50 a 11.25; Lard, 10 a —.

BOLTON FARM, NEAR BRISTOL PENN.*To be Rented.*

That part of Bolton farm which is in the occupation of the present tenant, containing one hundred and twenty acres of land, more or less, including the tenant's house, one of the best barns in Pennsylvania, an orchard of five hundred apple trees of the best fruit, cider press, mill, &c. &c. will be rented to a tenant who can be well recommended as a suitable person to provide and keep on the farm, only the best selection of every description of stock, and who is capable of managing a first rate grain and dairy farm. The object of the proprietor is, to introduce into his neighborhood the practice of raising exclusively, the best of every description of stock, for which purpose Bolton farm is well adapted by the proper proportions of meadow and upland, its conveniences for summer and winter, and its position for facility of transportation by the Delaware canal, and Bristol and Philadelphia Rail-road. For further particulars apply to the subscriber on the premises. **JAMES P. MORRIS.**

Dec. 20, 1833.

31.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

I. I. HITCHCOCK,*American Farmer Establishment.***CLOVERSEED—AGENCY.**

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK.**ORCHARD GRASS.**

Is scarce and high. Those who have any to dispose of, can now get a good price for it. Address

I. I. HITCHCOCK,*Amer. Farmer Establishment.***DURHAM BULL CALF.**

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK*American Farmer Establishment.***JACK.**

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address

I. I. HITCHCOCK,*American Farmer Establishment.*

A good Jenny is wanted by the owner of this Jack.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK.**RAMS AND EWES.**

One Ram of last spring's yearning, of the purest Bakewell blood, at \$75.

One do. one and a half year's old, with a defect* at \$50. Two of the mixed blood of the Bakewell and South-down, at \$25 each.

Several Ewes of the pure Bakewell blood at \$50.

These beautiful and valuable animals, may be had by application to

I. I. HITCHCOCK,*American Farmer Establishment.*

*His testicles are always up in his body—in every other respect he is a very fine ram.

NEW CHINESE MULBERRY.*(Morus Multicaulis.)*

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK.**MAJOR JACK DOWNING.**

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK.**AGRICULTURAL IMPLEMENTS.**

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave **THRESHING MACHINE**, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of **PLOUGHS**, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store **AGRICULTURAL IMPLEMENTS**, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of **GARDEN SEEDS**, suitable for the season, and a small quantity of **ORCHARD GRASS SEED**, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.**FRUIT, ORNAMENTAL TREES, SHRUBS, &c.**

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chesnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 15.00 a 25.00.—Virginia, 4.00 a —.—**Rappahannock**, 3.00 a 4.00.—Kentucky, 4.50 a 8.90. The inspections of the week comprise 205 hlds. Maryland; 54 hlds. Ohio—total 259 hlds.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5.37 a 5.50; (wagon price, 5.25 a —.) city mills, 5.25 a 5.31½; city mills, extra, 5.62½ a —. **CORN MEAL**, for domestic use, 1.31 per 100 lbs.; do. yellow kln dried, 3.37 per bbl. and 15.00 per hhd.—**GRAIN**, red wheat, 1.00 a 1.10; white do 1.15 a 1.20.—**CORN**, old yellow, 50 a 51; white, 48 a 50; in the ear, — a — per bbl.; RYE, 65 a 67; chop rye, per 100 lbs. 1.50 a —. **OATS**, 35 a 36.—**BEANS**, 1.50 a —.—**PEAS**, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—**CLOVERSEED**, 4.75 a 5.50;—**TIMOTHY**, 2.50 a 3.00.—**ORCHARD GRASS**, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —. **Lucerne** 3½ a — lb.—**BARLEY**, — a —. **FLAXSEED**, 1.62½ a 1.75.—**COTTON**, Va. 12 a 13; Lou. 14 a 15; Alab. 12½ a 14; Tenn. 12 a 13; Upland 12½ a 14.—**WHISKEY**, hlds. 1st p 26½ a —; in bbls. 28 a 28½.—**WOOL**, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—**Unwashed**, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—**HEMP**, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—**Feathers**, 3½ a 4; **Plaster Paris**, per ton, 3.75 a —; ground, 1.37½ a — bbl.—**Iron**, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—**Prime Beef** on the hoof, 5.00 a 6.00.—**Oak wood**, 3 ½ a 3.50; Hickory, 4.50 a 4.75; Pine, 2.50 a 2.75.

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GENERAL**Agricultural and Horticultural Establishment:****COMPRISING,**

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

☞ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

☞ DIRECTION OF LETTERS.—Address all business letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J.D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JAN. 3, 1834.

THE NEW YEAR.—That our kind patrons may all live as long as they shall want to, that is, as long as they shall be happy—and that they may be very happy as long as they shall live, is our sincere aspiration at this season of good wishes and kind feelings. We believe that he lives happiest who adheres most closely to a *natural* course of life, and is most conversant with natural objects; and that he who seeks what are called the honors, the pleasures, the refinements and the elegancies of the *haut ton*, or fashionable world, makes a sad deviation from the road to human happiness.

Hence we hold that the farmer whose intercourse is chiefly with natural objects—his lands, his crops, his stock of animals, and above all, with the domestic circle of his own family, is a much happier man than the dandy, the politician, the office-seeker, or the office-holder. The *real* wants of life are easily satisfied; most of our pleasures are derived from our intercourse with nature in some way or other, while nine-tenths of the wants and the miseries that beset us are purely artificial—the legitimate offspring of what is vauntingly called civilization and refinement. We subjoin, as relevant, a few verses which we have cut from some of our exchange papers—from the Baltimore Patriot, we believe.

Oh, happy! blest of all his race,
The man who tills the soil;
Whose spring and harvest hopes, in place,
Come sweetening every toil.
Were mine a field of waving grain;
A mead, with "cattle sprinkled o'er,"
A wood, to tempt the warbling train,
Before my house a grassy plain,
Descending to some shore;
In joyous ease I'd spend my life,
In spite of fortune's frown;
Nor e'er, like Lot's undutious wife,
Regret the noisy town.
Farewell, the counting house and store,
Amid the city's din;
My eyes and ears be vex'd no more,
With "Lend me, Sir," without the door,
And "Sir, your note," within.

Lord help the man who spends his days
In borrowing and lending;
Dogg'd here and there a thousand ways,
Yet times are never mending.
Be mine the wagon, plough and spade,
'Tis man's first destination;
With health and plenty more than paid,
I'd take my cheer and shake my head
At fools of rank and station.

PINDAR HAYLOFT.

SUGGESTIONS ON IMPROVING THE STAPLE OF COTTON, BY THE USE OF SALT AS A MANURE.

MR. HITCHCOCK: *Mobile, (Ala.) Dec. 14, 1833.*

Sir,—I have often been led to reflect on the cause of the long staple in Sea Island Cotton. Land, equally as good, at a distance from the coast, with a climate fully as favorable for its growth, fails to produce the long staple cotton. If Sea Island cotton seed be carried and planted for a few crops in succession in the interior of the Carolinas, Georgia and Alabama, it soon degenerates into the short staple cotton; and if the seed of the latter be carried to the sea coast, it in a few crops produces long staple cotton. What can this be owing to? Certainly not to the difference of soil, nor climate, for these may be the same in both instances. It must

then be owing to the influence of salt, exhaled from salt water, and to salt mixed with the soil.

I suggested this idea to Mr. EVANS, an intelligent and wealthy planter, of Wilcox county, in Alabama, and that if true, *common salt* might be used to great advantage as a manure, to improve the staple of cotton in the interior. He approved of the suggestion and promised to make trial of it the present or the ensuing year. He says he has no doubt of its success, from the known fact that the staple of cotton which is grown in the neighborhood of *salt springs* and *salt licks* in the interior of the state, has a much longer and finer staple than that produced from plants grown at a distance from such places.

This is strong evidence of the truth of the position, and, being true, clearly points out the great utility of *salt as a manure*, in improving the staple of cotton. My plan would be to drop about a handful of salt in each hill of cotton, with the seed, and to cover all together. Or, to determine more accurately the proportion of salt to the earth, for the reception of the seed, I would saw two or three barrels in two, and set the heads or ends in the ground; in the *first* I would put so much *soil* and *salt*, in weight and bulk; in the *second* I would vary and enlarge the quantity of salt; in the *third* I would still increase the quantity; and in the *fourth* I would carry the salt to its maximum; I would let one head contain *soil alone*, unmixed, and plant the same quantity of short staple seed in each, and give them all the same quantity of water and the same exposure. One barrel head of plants might also be sprinkled with a weak solution of salt and water, to ascertain its effect upon them. Even the seed of a box might be steeped in salt and water a short time previous to planting. I would keep a book, and record every part of the experiment, with the time of planting, with notices of the prevailing weather, the time of blooming, the formation and maturity of pods, &c. I would examine carefully the staple taken from the stalks reared in each box, or barrel head, and ascertain the difference, if any, between the staple produced by each.

Such conducted experiments would not only test the utility of salt as a manure in improving the staple of cotton, but would clearly indicate the best proportions for mixing it with the soil in which the seed is to be planted.

I remain, very respectfully, yours, &c.

ALEX. JONES, M.D.

We are indebted to the Hon. Isaac M'Kim, member of Congress from this city, for a copy of the "Manual on the Cultivation of the Sugar Cane, and the Fabrication and Refinement of Sugar; prepared under the direction of the Hon. Secretary of the Treasury, in compliance with a resolution of the House of Representatives of Jan. 25, 1830;" from which we commence in the present number the publication of extracts. This Manual has been prepared under the direction of the Secretary of the Treasury by Professor Silliman, of Yale College. The following is the letter of the Professor to the Secretary, accompanying the result of his labors:

Washington, May 28, 1833.

To the Hon. LOUIS McLANE,

Secretary of the Treasury:

Sir—In accordance with the request contained in your letter of August 31st, 1832, I now have the honor to offer, for your consideration, a report drawn up in compliance with the resolution of the House of Representatives of January 25th, 1830—in which the Secretary of the Treasury was instructed "to cause to be prepared a well digested Manual, containing the best practical information concerning the culture of the Sugar Cane, and the fabrication and refinement of Sugar, including the most modern improvements."

Agreeably to the permission contained in your

letter of October 18th, 1832, I have employed such assistance as I have found necessary in the execution of the duty. Mr. C. U. Shepard has, with this view, visited Louisiana, and other districts in the South, where the sugar cane is cultivated. Mr. O. P. Hubbard has examined the refineries in Boston; and I have myself visited some of the principal establishments of this kind, in Baltimore, Philadelphia and New York, aided, in the latter city, by Mr. G. S. Silliman. Correspondence has, in the meantime, been extended to those parts of the United States, where sugar is fabricated or refined. The printed reports, transmitted from the Treasury department, have been attentively considered; and the best sources of information, in treatises and journals, have been explored.

The investigation in the South was prosecuted with the understanding, that it was necessary to communicate the document to the House of Representatives during the late session of Congress, and it was not known, until Mr. Shepard returned to the North, that more time could be allowed. Had we been aware of this, the investigation in the South might have been more extended, and possibly, more satisfactory.

In the hope however that the Manual may, in some degree, answer the design of the government, I have the honor to remain, very respectfully,

Your most obedient serv't,

B. SILLIMAN.

MR. HITCHCOCK: *Emmetsburgh, Dec. 28th, 1833.*

Dear Sir,—Having seen an advertisement in your journal, offering the Chinese mulberry (*Morus mulicaulis*) for sale at a cheaper rate than heretofore, I have been induced to send for a dozen of the trees, with a view to continue some experiments which I have been pursuing successfully (in a small way) for three years past, on the culture of the silk worm, with the common black mulberry. So far as my experiments extend, I do not find near so much difficulty in their culture as one would expect, from reading the several documents submitted to and published by authority of Congress a few years since. I may probably give the result of my experiments at a future time. Suffice it to say, that they are sufficient at this time to convince me that there is no crop which the agriculturist can produce in this country half so profitable as silk, in the state of cocoons, at the prices which you have offered for them; but it will require time and successful experiment to convince the farmers of this fact.

J. S.

THE WEEVIL.—Salt is said to be a complete preventive against the destruction of wheat by the weevil. Mix a pint of salt with a barrel of wheat, put the grain in old salt barrels, and the weevil will not attack it. In stacking wheat, four or five quarts of salt to every hundred sheaves, sprinkled among them, will entirely secure them from the depredations of the insect, and render the straw more valuable as food for cattle.—*Hort. Reg.*

SALT SPRINGS—*Supply of Water.*—In our remarks last week, in relation to the abundant supply of water, in the Onondaga Salt Springs, we fell into some errors in our figures. The actual consumption of water annually, cannot be less than 90 or 100,000,000 gallons, averaging 260,000 gallons per day for 365 days, though the consumption during the summer months cannot be less than 7 or 800,000 gallons per day.—*Onondaga Standard.*

Why is it advisable to pour boiling water into the tea pot before the tea is made?

Because the vessel being previously warm, may abstract less heat from the mixture, and thus admit a more powerful action.

AGRICULTURE.

(From the Sugar Cane Manual.)

THE SUGAR CANE.

ORIGIN AND HISTORY.

Concerning the origin of the Sugar Cane, there is some diversity of opinion. While none have doubted that it is indigenous to China, where it has been cultivated for more than twenty centuries, it has been contended by some, that it existed in South America, Mexico, and even in Louisiana, prior to the discovery of these countries by the Europeans. This opinion appears to be countenanced by the following evidence.

Father Labat affirms, in his *Histoire d'Amerique*, that the Cane was seen growing in Brazil, by many travellers, prior to the year 1580; Jean de Lery declares that he found a great quantity of it near Rio Janeiro, in 1556; and Father Hennepin asserts that the banks of the Mississippi, for thirty leagues from its mouth, were full of Canes in 1680. With respect to the testimony of Labat and Jean de Lery, it may be said, that it would be surprising if the Portuguese had failed to introduce the Sugar Cane into Brazil before those dates, when it had been seen to flourish for at least thirty five years at a distance no greater than that of the island of St. Thomas. The plant taken by Hennepin for Sugar Cane, upon the banks of the Mississippi, was undoubtedly nothing more than a species of Bamboo, called the Wild Cane. (*Mlegia macrosperma*.)

The ancient Egyptians, the Phenicians, the Jews, the Greeks and the Romans, had no knowledge of the Cane. The plant of which Lucan says,

"Quique bibunt tenera dulces ab arundine succos,"

and probably that alluded to in Isaiah xliii. 24—"Thou hast brought me no sweet cane with money"—was a species of the bamboo. The cane passed into Arabia only at the close of the thirteenth century, at the time when the merchants of that country who were engaged in commerce with India, emboldened by the example of Marco Paulo, undertook to supply themselves with the commodities of the east, from whence they brought the sugar cane, which was cultivated at first in Arabia, afterwards in Nubia, and finally in Egypt and Ethiopia.

The introduction of the cane from the East into Europe took place about the year 1148; ever since which date it is known to have been cultivated more or less extensively in Sicily. By some writers it is maintained, that the Saracens brought it directly from China to that island; while others prefer the opinion of its previous introduction into the island of Cyprus, where it is known to have been cultivated at a very early period, and from whence they suppose it passed to Sicily. Lafitau mentions the present made by William II, king of Sicily, to the convent of St. Bennett, of a mill for grinding sugar canes, accompanied by the royal privilege, workmen and appurtenances,—the donation bearing the date of 1146.* About the year 1420, Don Henry, regent of Portugal, transplanted the cane from Sicily to Madeira; where it succeeded perfectly, and spread throughout the Canary Islands, from which all Europe derived its supply of sugar till the discovery of America. From the Canaries, the cane was carried to Hispaniola, now called Hayti, in 1506; and about the same time, to Brazil. Towards the middle of the seventeenth century, it was introduced from Brazil into Barbadoes; where

the sugar it afforded is said to have been at first so inferior, as scarcely to be worth sending to England. In 1643, sugar began to be made by the English in St. Christopher, and in 1657 by the French in Guadeloupe. In 1656, there were only three small sugar plantations in Jamaica. About this period also, the cane was introduced into the Dutch and Danish colonies, and into Mexico, Peru, and Chili.

The sugar cane was first brought into the United States from Havana, by Mr. Boree, of Louisiana, with the intention of cultivating it solely for the manufacture of rum; but on the evaporation of the syrup it was perceived that it would afford sugar, and this gave origin to its culture for the fabrication of sugar in this country.

BOTANICAL CHARACTER AND DESCRIPTION.

The sugar cane falls within the second tribe of the monocotyledonous plants, called the Glumaceæ; and is characterized by the want of a true perianth and corolla, in the room of which, the floral envelopes are formed by imbricated bracts. The Glumaceæ are divided into two families, the Cyperaceæ and Gramineæ, or Grasses, to the latter of which the Saccharum belongs,—the family being distinguished by slit leaf-sheaths, a lenticular embryo on the outside of the albumen, with a naked plumule, and cylindrical stems. Robert Brown has associated Saccharum along with the following genera into a sub-family, called the Panaceæ; viz. Ischaemum, Holcus, Andropogon, Anthlersteria, Cenchrus, Isachne, Panicum, Paspalum, Kermaria, Anthraotia, Monachne, Lappago, and several other related genera,—the character being a locusta of two flowers, of which the lower or outer is uniformly imperfect, being either male or neuter, and then not unfrequently reduced to a single valve.

The character and description of the genus is as follows: two calycinal valves, (sometimes wanting) furnished exteriorly at their base with a long and silky down, and containing but a single flower; two floral valves, three stamens and two styles; flowers disposed in panicles, usually presenting a delicate appearance from the fine down with which they are abundantly clothed. The Saccharum approaches the Reed (genus *Arundo*;) but differs from them, inasmuch as these have their down within the calycinal valves, while in the Saccharum, it is inserted upon the outer side. The genus contains a number of species. There is but one, however, which is cultivated for sugar: the others are remarkable on account of their size, and some of them for the uses to which they are applied.

The species called the sugar cane is the *Saccharum officinarum*. The following is a general description of it:—Root jointed, sending forth four or more shoots, proportionable to the age or strength of the root, and the goodness of the ground. The height is from eight to ten feet, and in moist, rich soil, nearly twenty feet. The stem is jointed, and the joints are more or less distant, in proportion to the quality of the soil. The leaves are flat, having a deep, whitish furrow, or hollowed mid-rib, which is broad and prominent on the under side; the edges are thin, and armed with small sharp teeth, which are scarcely to be discerned by the naked eye, but will cut the skin of a tender hand, if drawn across it. A leaf is placed at each joint; and the base of it embraces the stalk to the next joint above its insertion, before it expands; from thence to the point, it is three or four feet in length, according to the vigor of the plant. The leaf is farther divided by a nodosity which occurs at the distance of six or eight inches from the stalk, by which a contraction of the breadth of the leaf takes place, so as to form a channel for the water to descend to the joints. The leaves are situated, alternately, upon opposite sides of the stalk. The panicle of flowers is three or four feet long; and is composed of many spikes, nine or ten inches in length, which are again subdivided

into smaller spikes. The seed is oblong and pointed, and ripens in the valves of the flower. In the cultivated state, the period required to attain maturity varies from twelve to twenty months.

Each cane joint, as in all the Grasses, presents a knot, or circular impression, from one-quarter to one-third of an inch in width, whose surface is marked by little points, disposed in the quincunx order, and forming two or three rows. From these points originate roots, when the plant is laid down. Upon one side of the knot, a small scaly projection, somewhat swollen, and terminating at its upper extremity in an acute angle, is observed, which is the germ of a new plant. The knot of the next joint above or below, has its bud upon the opposite side. The rind of the cane is formed of ligneous vessels, very closely arranged. The internal substance consists of undulatory vessels whose arrangement is such, that they present horizontal layers, maintained at fixed and equal distances by sap vessels, the cavities of which are hexagonal, and, when the cane is mature, are filled with saccharine juice. Each sap vessel is divided into two parts, one taking the vertical direction, the other becoming horizontal; the latter is interlaced with the vertical vessels, and after having formed a thin stratum, they unite into a bundle, which pierces the rind, and constitutes the bud above described. The vessels which continue in a vertical direction, give to one side of the joint a convex, and to the other a concave surface, excepting at the knots, where the surface is convex on all sides.

The number of joints varies from forty to sixty. They differ much in their dimensions, being short or long, large or small, straight or bulging. The foot of each stock is called the stole. It is formed of six or seven peculiar joints, having rows of little points at their surface, which are elements of roots. These joints are divided from each other by a leaf.

The *Saccharum officinarum* offers several varieties, which seem, in some cases, nearly adequate to form specific distinctions; although they are believed to have originated merely in differences of climate and culture. The most remarkable variety, or that which was first known to Europeans, is the sugar cane of Asia. It is called the Creole cane. It flourishes every where within the tropics, to an elevation of three thousand feet above the level of the sea; and in Mexico, it has been cultivated at nearly double this elevation. It affords more and better sugar as it approaches meridional latitudes, and places which are not too humid. A second variety is called the Otahite cane, from its having been brought to Antigua, and afterwards to the continent, from Otahite. It is a taller and more powerful cane than the Creole, having larger joints, and more pendant leaves. It arrives at maturity sooner, affords more sugar, and succeeds in soils which are too poor for the above variety. It thrives in colder climates than the Creole. The texture of its vessels is more ligneous, in consequence of which it offers greater resistance to the winds. In the West Indies, it is said to afford one-sixth more sugar than the Creole variety, besides having the advantage of yielding four crops in the same time required for three of the Creole. Its juice contains less mucilaginous and feculent matter, in consequence of which, it crystallizes more perfectly on evaporation, and affords a cleaner sugar. The third and last principal variety is the Violet cane, which has been erected into a species by M. de Tussac, in his *Flora of the Antilles*.^{*} Its culm is purple; and in one variety, its leaves also are said to be purple. It prefers old land, and that which is rather dry. It flowers a month sooner than the other varieties; but gives a sugar less white, and affords more molasses.

* According to Lafitau, the cane was brought into Europe at the time of the crusades.

Albert Aqueus, in the description which he has given of the processes employed at Acre and Tripoli in order to extract the sugar, says, that in Palestine the crusaders being destitute of provisions, had recourse to the sugar canes, which they sucked for sustenance.

* Tom i. p. 160, fig. 25. Also M. M. Humboldt and Bonpland, *Nov. Gener. et Spec. plan.* tome i. p. 146.

Dutrone and Rumphius have mentioned several varieties less capable of distinction than those above enumerated; and which appear to have been produced from slighter diversities of soil and climate and within shorter periods of time.

The varieties of cane cultivated in the United States, are the Creole, the Otaheite, and a third variety called the Ribbon cane, which appears to be a hybrid between the Violet and the Otaheitan varieties.

CULTURE IN LOUISIANA.

Preparation of the Land.—The sugar lands of Louisiana, from the low level at which they lie, are redeemed to agriculture by the ditches which are run back from the Mississippi, or the smaller streams upon which they are situated, into the contiguous swamps, which sink in level as they recede from the rivers, until they reach the Gulf of Mexico, or the lakes and bays which make inland from the Gulf. These ditches proceed back, at right angles to the river upon which the plantation lies, and extend in perfectly straight lines to a distance, from one to two miles, increasing in width and depth as they recede, until they finally inscuate with some natural drain, which receives, more or less perfectly, the waters they discharge, and carries them off to the sea. The natural drains owe their origin to the overflowing of the rivers, and to great rains—causes that were in operation previous to the construction of the ditches: they pursue an irregular course, whose general direction is a diagonal, between that of the river and the artificial drains. Their beds are broad, often enlarging into a kind of lake several hundred feet across. In carrying back his straight ditches, the planter often intersects the heads of these little bayous which are thus dried up as he proceeds, and their broad and circuitous beds are redeemed for cultivation; while every part of the plantation is thereby rendered more dry and arable.

Very considerable differences, of course, exist on different estates, with respect to the intervals allowed between these ditches; and which arise in part out of the slope of the land in different districts. Two kinds of ditches are sometimes employed; one large, the other small, occurring alternately,—the larger being situated two acres apart. At their commencement near the river bank, or levy, they are narrower and more shallow; and they go on increasing in capacity as they run back. The large drains may be said to have an average width, at top, of five feet, and at bottom, of three, by two and a half in depth; while the narrow drains are two and a half, at top, and one and a half, at bottom, by one and a half deep. On the French plantations, the narrow drains are frequently omitted; the wider ones being situated two acres apart. Occasionally, a ditch is constructed nine or ten feet wide, at top, and proportionably deep. These ditches are carried into the swamps, a quarter, or half a mile beyond the border of cultivation; and whenever the planter would bring more land under cultivation, the preliminary measure is to extend his ditches farther into the swamp. Through the middle of the plantation runs a road from forty to sixty feet wide, with ditches on both sides; and when the plantation is wide, other parallel roads, of about half this width, are situated at distances of nearly a quarter of a mile. The sugar house and settlements are generally situated upon the main road. Cross roads, about four acres distant from each other, and twenty or twenty-five feet wide, with a shallow drain on one side or on both sides, divide the plantation into rectangular lots of four acres each. Across these lots in the centre, shallow drains are made with the plough, dividing the field again, so as to form two acre lots.

The land, thus divided off, is prepared for the

cane by being ploughed into furrows lengthwise of the plats, and harrowed; after which, it is drilled in the same direction, at distances varying between thirty inches and six feet, according to the newness and strength of the soil; when the canes are laid in the furrows, in pieces of from two and a half to four feet in length,—being so placed as to form two parallel rows in the furrow, three or four inches apart. The two rows of cane in one furrow are not continued in all instances without breaks; but at least one row and a half is invariably maintained. They are covered with from one to three inches of earth, according to the season of the year in which the planting is done.

Planting.—In describing this process, it will be most convenient to begin our account with the period when the canes are ripe. By the last of October, in ordinary seasons, more or less of the cane attains its usual maturity for this climate. When this period arrives, the first thing to be done is to make provision for future crops. This early attention is given to the saving of seed on account of the injury occasioned to seed cane by frost, and which is liable to occur before the middle of November. The general rule observed in saving cane for planting, is to reserve such a portion of the crop as is the least valuable for grinding. Accordingly, those fields which have produced cane from the same stubble for two, three, or four years, and which now require, from the stunted growth they produce, to be replanted with cane or some other crop, are selected to furnish seed canes. The canes, or ratoons, as they are called, from such fields, are small and short, having the joints more approximate, which is considered as an additional recommendation in their employment for planting, as every joint sends up cane shoots, and thus contributes to a fuller stand of cane than when the joints are farther apart. One acre of such ratoons is sufficient, in ordinary cases, for the planting of three acres of land. They are cut near the ground, and carted to the vicinity of the fields where they are to be planted; being formed, when not planted as soon as cut, into long beds about fifteen feet wide, which are called *mattresses*. These are formed by commencing at one end of the bed, and placing a row of canes, with their tops on, across it—the tops directed outward. Upon this, a second row is superimposed, with this difference, that the butts are placed about eight inches or a foot in advance of those of the first row. Upon the second row a third is placed in like manner, and so on. By this arrangement the lower part of the stalk is preserved from the cold by the tops; excepting in two or three layers across that portion of the mattress last formed, where the protection is effected by four or five inches of earth.

But a part of the planting is done with cane tops, or that portion of the cane which is rejected in cutting it for the mill, and which consists of about three feet of the top of the stalk, to which the green leaves are attached at the time of gathering the crop. These, when not reserved for planting, are suffered to remain on the field, for the protection of the stubble; but when cut for planting, it is usual to cut them one or two joints lower than common, and to form them into wind-rows across the field,—the tops from two or four rows being thrown into one, which is arranged, as respects overlapping, after the manner of the mattresses above described. The fields from which the cane tops are derived for planting, are frequently those which were planted the previous year, and in which the cane is high, and somewhat prostrated at the commencement of the grinding season; in consequence of which, it requires to be cut the earlier, to prevent it from rooting at the lower joints.

The provision for a future crop, above described, is made earlier in the northern part of the cane dis-

trict, where they are more exposed to the access of frost, early in the season.

When the extent of the force on a plantation will allow, the land is planted as fast as the seed cane is cut. The driest fields are selected for this early planting. It is thought to be attended with decided advantages—ensuring to the cane more generally the life of the buds, than when in mattresses, and giving it an earlier start in the spring. Canes planted at this season, are covered to the depth of three or four inches.

The remainder, and indeed by far the greatest part of the planting, is deferred until the grinding season is over, which varies from the twentieth of December to the middle of January; and often, it is not completed before the first of March. The covering given to the canes is more and more shallow as the season advances, until towards the close of February, when it rarely exceeds two inches.

In relation to manures, and the distances at which they plant, these points are regulated by the newness of the lands. These are first brought in from the condition of swamp by carrying back the drains, with a view to get rid of the water, as has been remarked above, and by cutting down the trees, and setting fire to the rubbish. The first crop is Indian corn, which is planted with hoes. It is picked early in autumn; and the crab grass, (*digitaria sanguinalis*) which comes up abundantly on new land, is cut up with hoes, and stacked for winter feed. The land is now drilled for the first crop of cane, by a plough, without a general ploughing,—the furrows being made from four and a half to six feet apart. The kind of cane planted is Red Ribbon; because it is found to be the most hardy variety, and does better than either of the others in rich and wet lands,—the canes it affords the first year being fit to grind, and being used for seed. When lands have been worked for many years, the other varieties are employed, in various proportions, excepting in the northern sections of the cane district; where, from their liability to frost, the Red Ribbon is almost exclusively used on all kinds of land. After land has been once planted with cane, the furrows are, ever after, made much nearer together,—the average distance being about three feet from centre to centre for Creole cane, and four feet for Otaheite and Red Ribbon. The Red Ribbon ratoons are the best, the Creole are next, and the Otaheite are scarcely planted at all, excepting in the latitude of New Orleans, and there only for one year.

As a general statement, it is true that no manure is used; but the land, when tired of cane, which does not happen short of eight or ten years from the time of its being brought in from a wild state, is planted one or two years to corn with peas (beans,) which perfectly restores it to full tilth for at least three years after. In general the ploughing is not deep; but when the culture is changed from cane to corn or peas, the ploughing is deeper, in order to bring up a fresh soil, and to destroy the roots of the cane.

Culture.—As soon as the black frosts are over, and the ground becomes sufficiently dry, the covering of the cane that was planted in the autumn or early winter is reduced to one or two inches, by scraping with hoes the earth from the tops of the hills, towards the centres of the alleys between the rows. After this, the hoes, followed by the ploughs, are passed through the fields about every ten days, in order to keep down the grass and weeds. When the cane has grown eighteen inches high, a small quantity of the earth is drawn back to the plants; and in the course of the two succeeding dressings, a bed is formed for them, five or six inches in depth. In new land, notwithstanding the weeds, much less hoeing is done, on account of the luxuriance of the cane in such lands.

The stubble cane is, in some measure, protected

from the frosts of winter by the covering of tops left on the rows in harvesting the cane. In the spring this is burnt off, and the portion of cane stalks which remains after the fire has run over the fields, is carried out into the roads. A plough is now passed along on each side of the stoles, turning the earth from them into the alleys. When the shoots have got up five or six inches, they commence restoring the earth to the stubble; and treat the fields in the manner described above for plant cane.

A partial deviation from the above practice, with ratoon canes, has been adopted, to some extent, in the southern section of Louisiana. When the winter is mild, and the buds of the tops which are left in the field are generally alive, the tops are stripped of their leaves, and the stalks are laid down in a furrow made on the side of the stubble row. This is done for the purpose of obtaining a fuller stand of cane than the stubble alone would afford.

In consequence of the effects of frost upon the stubble, the ratoons of even the hardiest variety, the Red Ribbon Cane, are so deficient when suffered to ratoon a third year, that the practice is becoming extensive in the southern portion of the cane district, to plough up the fields after the second or third year of ratoons, and to replant with cane, or to plant Peas, according to the strength of the land; while for the same reason, in the upper part of the cane district, it is considered a judicious system of planting on land which has been long in use, to put down one-third to plants, one-third to Corn and Peas, and to retain one third in ratoons.

It is a part of the system of cane planting in Louisiana, to raise as foil a stand of cane upon the ground as possible,—experience having proved that more sugar is obtained from the land, than when it is so planted as to allow a free circulation of air among the plants. Neither the cutting up of suckers, nor the trashing of cane is practised.

The order in which the different varieties of cane are injured by frost, is the following: the Creole suffers first, the Otaheite next, and the Red Ribbon least. In the cane district situated half a degree north of New Orleans, they suffer from frost nearly a fortnight earlier than in the lower section of the State. When the frost is very severe, they cut the cane down as soon as possible, with the tops and leaves on, and suffer it to remain in contact with the ground until it is required by the kettles. The advantages of this course appear to depend upon the gradual change of temperature which ensues when frosted cane is placed in contact with the earth, and in its being liable to fewer fluctuations from heat and cold afterwards, when in this position.

Notwithstanding the susceptibility of the Creole and Otaheite canes to injury from frost, sugar planters in the vicinity of New Orleans, and farther south, plant at least one-third of their crop in these varieties. The inducement to have a part of the plantation in Otaheite cane is, that if the season is a warm one, its yield is very great; while that for Creole arises out of its being suited to old lands, and if the frosts keep off, it affords a more beautiful variety of sugar than either of the other kinds, is handled with greater ease in harvesting, and costs much less fuel for the evaporation of its juice. It is agreed, however, that the Red Ribbon cane is the variety which best suits the climate.

No complaint is as yet made of insects, in the cultivation of the cane in Louisiana.

The carting of the canes, during the harvesting, is attended with a heavier expense, and with more trouble than any operation in the growth of the cane. The roads are often rendered excessively heavy and nearly impassible, from the rains that occur during the rolling or grinding season, which oblige the planter to maintain a great force of men

and animals, to keep the kettles in operation. Besides, the driving over stubble cane, which might, however, be in some measure avoided, is productive of very considerable injury to the succeeding crop. It requires from ten to twenty carts to furnish canes for two sets of kettles, in proportion to the distance of the cane from the mill, and the nature of the roads; an average number for the season may be sixteen. The manner in which the hands are distributed during the cutting season is the following, supposing the force adapted to a sugar house with two sets of kettles: forty hands, with knives, thirty-five to forty binders, or cart loaders, twelve to twenty cart boys, eight to supply the mill with cane, (who are stationed at the mill), six kettle men, two stable boys, two boys at bagasse (ground cane) carts, three firemen, two to wheel wood to the furnaces.

The average yield of the Sugar Cane in Louisiana may be stated at one thousand pounds of sugar and forty-five gallons of molasses to the acre, taking one year with another. With tolerable plantership, it may be stated on lands well subdued at twelve hundred, and with superior attention, at fifteen hundred. In a few instances, when the seasons have proved favorable, we have heard of two thousand, and even twenty-five hundred pounds, or more, to the acre, on fields of small extent.

(To be continued.)

CULTURE OF POTATOES.

A frequent change of seed is necessary. Any sort may be continued fertile and profitable by removing them from one county to another every fourth or fifth year, or by raising them alternately on very different descriptions of soil. In the cultivation of this useful plant, it appears from many experiments that it requires ample space. In field culture, placing the sets of the strong growing kinds in every third furrow, and those of the dwarfier sorts in every second, are eligible distances. There are different opinions held respecting the necessity of earthing up potatoes. On very thin soils, however, it is absolutely necessary. On deeply ploughed, or trenched ground, earthing up the stems is certainly less necessary, because as the under-ground runners, which produce the tubers, are inclined to extend themselves as deeply in the soil as the roots, they do not seem to require any additional depth of earth immediately over them. But this depends entirely upon the open porousness of the soil, and the manner of growth of some of the kinds.—Plucking off the flowers increases the size and number of tubers. It is founded on a law of nature, disposing a plant constituted to produce at the same time both seeds and tubers, to yield either one or the other more abundantly, according as either is destroyed. If tubers be not allowed to form, many flowers and apples will be the consequence; and if the flowers be destroyed as soon as they appear, the tubers will be increased. It is bad management to plant the refuse, or odds and ends of last year's crop, for the sets of this. If potatoes are planted at all, they should be planted well.—*Br. Far. Mag.*

GREAT YIELD.

Mr. Noah Clarke, jr. of this town gathered on the 26th of October, from one tree on his farm one hundred and nineteen bushels of sound apples—the produce of one tree, there being no other within fifty rods of it. It was ascertained that they would produce more than fifteen barrels of cider. This is certainly a great yield, as it is understood they were all (and none but sound ones) gathered at one time, leaving under the tree all those which had fallen during the fore part of autumn, and had become materially decayed.—*West-field Journal.*

Cure for Oxen strained by over-drawing.—About half a pint of common soap, stirred up with a quart of milk, poured down the throat of the creature will, we are told, speedily effect a cure.—*N. E. Farmer.*

DOMESTIC ANIMALS.

(From the New England Farmer.)

BREAKING STEERS AND COLTS.

T. G. FESSENDEN, Esq.

Sir,—I have seen several communications in your useful journal on the breaking of steers and colts, showing different ways by which they could be trained, with ease both to the manager and animals. Almost every persons likes his own management the best; and as my circumstances have been so limited, I have endeavored to adopt the cheapest and easiest mode of accustoming my young steers to the yoke, and my colts to the harness; and every humane person will pursue that course which will produce least bruised places and injured eyes, which are often to be seen on young creatures undergoing their training, and also of saving the trouble of making grad sticks and whip handles that are often needlessly broken about them. Now, sir, I will lay before you my mode of treatment to these young animals, and if you think it worthy a place in your useful journal, you are at liberty to publish it; if not, you will not wound my feelings at all. I call my young cattle calves till they are one year old. I have a little yoke made with a staple and ring in it. I tell my little boys to yoke up their calves: a small boy can do it, and it is quite a past-time to them; they being so young are not so strong but that he can manage them with ease: any small stick or twig answers to drive them with, and there is no danger of the boy or steers being hurt. When he can drive them where he wishes them to go, which will soon be the case, he will hitch them to a small stick of wood, or if it is winter put them to a hand sled, and drive round with that; they will soon become docile. There is no trouble with them afterward, especially if they yoked a few times the second winter; it makes them fond of their mates. Oxen that are trained when young are much more pliable and obedient, which adds much to their value; steers that run till they are three or four years old, are dangerous animals to encounter with: they are always running away with the cart or sled whenever there is a chance for them, and often serious injury is the result. I would not recommend working steers hard while young, as it would prevent their growth—there is a difference between working of them and barely training them.

Colts I begin with very soon after they are foaled; the mare should be bridled and led to the door and given a little salt. When the colt is one or two days old take him by the neck, handle him gently, he is then so young that he is not afraid, if his dam is near by him; continue this practice and he will very soon become fond of his owner, and will come on purpose to be handled after two or three weeks. It does not hurt the mare or the colt to use her moderately. If you want to go to meeting on the Sabbath, harness the mare into the chaise or wagon, and tie the colt to the arm of the carriage; he may be a little obstinate at first, but in going a few rods he will be peaceable and go very orderly; if there are many other horses about, your colt is always with you; if you want to stop at a place any time, let your colt loose, he can be taken again without difficulty, and before you start off tie your colt again; in this way there is no trouble of the colt following other horses away. When they become old enough for service, you do not have to run over all the pasture for the horse; they can always be taken with ease. Colts, trained in this way are completely halter broken. When you begin to harness them they are not frightened by the noise of the carriage behind them, and are sooner made quiet in harness. It has been a common saying, that if colts are handled when very young it depresses their courage, which I am convinced is not the fact. I have raised as many horses as most farmers of my age in this vicinity, and some of them the most spirited I ever saw. The above rules I have practised for quite a number of years, and can recommend them to others with confi-

dence. It convinces me of the truth and efficacy of a rule I have found in an old book I have much worn by usage—although yet whole, it has been in our family almost a hundred years—which says, “train up a child in the way he should go, and when he is old he will not depart from it.” Train up beasts while young—and I know when they are old they will be serviceable to their owners. Yours, &c.

JAMES WALKER.

(From Goodsell's Farmer.)

MANAGEMENT OF COLTS.

MR. GOODSSELL: South Chili, Nov. 25, 1833.

SIR.—Having noticed among the selections in your useful paper, an article from the New England Farmer, signed James Walker, describing his, and an excellent manner of breaking Steers and Colts, induces me to lay before you a different course of management with colts, which I have adopted for several years with perfect success.

I have experienced some difficulty with old horses being refractory, and baulky, in the harness, having formed a habit of becoming sulky, on the least emergency, and refusing to go at all, and have frequently witnessed the delays and troubles attendant on such habits, and the excessive beatings which the poor brutes are often subject to for want of being properly managed at the beginning.

I therefore, to avoid all such troubles, commence with the colt about one week old. I halter him, and tie the halter around his dam's neck, and lead her for some minutes. After some feeble resistance the colt submits, being easily induced to lead by the side of the mother. I pursue this for some weeks, once a week, allowing a boy to ride the mare. In the mean time, I hitch the colt to a firm post, which it will pull at, but to no effect; then handle him from head to foot, frequently coming up to him until he is satisfied that there is no unfriendly intention. When the colt is about three months old, and has acquired a good appetite, choosing a warm day, I hitch the mare and colt, at a little distance from each other, and after about two hours' abstinence, I draw the milk from the dam, and present it to the colt, which he soon learns to drink. By repeating this a few times, he drinks readily, when the milk from cows, may be substituted for that of his dam. When weaned this practice will be found beneficial as the loss of flesh may be prevented, and the colt kept in a growing condition. Colts thus practised will not refuse sour milk although it has become thick.

The benefit of this practice was fully demonstrated with a colt of mine, which at two years old, from unskillful castration, was reduced so low, that he was not able to rise alone, or receive any kind of food except milk, and not more than one pint of that at a time, as even that quantity in some instances produced almost fatal paroxysms which lasted several minutes. In this instance a few gallons of milk saved his life, and he is now a valuable horse.

At two years old I bit my colts thoroughly, but never allow them to be treated harshly. Occasionally before they are three years old, I put a harness on them, and lead them. I next put on a blind bridle, traces and whippetree, with a rope or chain attached to it, held by a man who pulls it gently as the colt inclines to draw, being careful not to stop him. I next put a well broken horse by his side, harness them together, and attach a double whippetree, with as many men to hold it as is necessary to require all the colt's exertions to draw them, letting the traces from the beginning play freely against his legs so that he shall become familiar with them. I next attach the reins and take a whip, continuing yet to lead him, occasionally snapping the whip, with corresponding actions calculated to hasten his speed. The colt soon learns the use of the whip and what is meant to be communicated by it, and hastens his speed accordingly. I next hitch the span to a lumber wagon, tying that

end of the whippetree to which the old horse is hitched back, so as to keep it square, to prevent him from throwing the colt back, by his superior strength. In this manner I drive them for some time, occasionally stopping where there is a gentle ascent in the road, so that the wagon will move backward, and with gentle pulling upon the reins learn the colt to travel backwards, and by repeating it often in various places, he soon learns to comply in this respect with the wishes of the driver without contracting any refractory habits. I continue using him in this kind manner, being careful never to overload him, until his age and experience will justify potting him to heavy loads.

The best method with which I am acquainted, for breaking colts to the saddle, and on which I have practised with perfect success, is to take them from home in company with a horse, with which they are acquainted, there to get on and off from them, several times, until they submit to being mounted without resistance, then let the riders mount both the old horse and colt, the rider of the former leading the colt by the side of the horse. The colt will be disposed to keep company with the horse, and will soon learn that you wish him to go forward. Let the speed of the horse be increased a little, occasionally, and the colt will soon learn to increase his also, as he will be unwilling to be left alone, and will be inclined to follow the horse home.

I have in this manner succeeded extremely well with a colt of three years old, which at first could not be rode past bars, gates, or barns where he was acquainted.

By injudicious treatment, and requiring colts to perform that they have never learned, the lives of riders are often in jeopardy; and by maltreatment, they contract bad habits, which it is much easier to avoid than to correct after they have contracted them.

I am Sir, yours respectfully,

ALLEN T. LACY.

["A merciful man is merciful to his beast." Mr. Lacy's method seems perfectly in accordance with the laws of humanity. How often do we see the most brutal punishments inflicted on these noble animals for not performing that which they have never been taught; such practices are as far from reason as it would be to punish a child for not spelling who had never been taught the alphabet.—*Ed. Gen. F.*]

(From the New York Farmer.)

OBSERVATIONS ON THE MANNER OF NOURISHING MILCH COWS IN PARIS.

[The following translation was sent to us by an unknown correspondent, from whom we should be pleased to have similar and frequent favors. Milkmen of this city frequently meet with heavy losses from the death of cows. We know of one who, within a few years past, supposes his losses in this way to amount to one thousand dollars. It is not uncommon for milkmen to lose from five to ten cows in the year.—*Ed. N. Y. Farmer.*]

The business of selling milk in large cities, especially in such capitals as London and Paris, is very profitable, and it has been remarked that the milkmen, in the environs of Paris, are in general the richest inhabitants of the villages in which they reside. This increase of fortune is attributed as much to the influence of an illegal and actual gain, augmented by fraud, as to the benefits which the business itself naturally affords them.

On the other hand, the great number of vaccaries established even in Paris, where the greater part of all the materials used as food for cattle are subject to heavy duties, shows that this business is lucrative.—The Council of Health, two years ago, thought it advisable, as a good speculation, to establish good vaccaries within the limits of the capital.

M. Marie, proprietor of the vaccary of Saint Anne, had anticipated this design, by erecting, near the gates

of Paris, a special and extensive establishment, for the purpose of delivering to consumers, milk unmixed and perfectly pure.

Our number for October, 1830, contains a report drawn up by a committee elected by the Council of Health, who had paid a special visit to this useful establishment, and addressed a very favorable report to the Inspector of Police on the subject.

It is remarkable that, notwithstanding this valuable enterprise has existed more than five years, it is still but little known, and poorly appreciated, by the inhabitants of Paris, who cannot persuade themselves that a man can be sufficiently honest to furnish milk without adulteration. But that this is an incontestable fact, we have proved many times.

The graziers who live in Paris employ all possible means to obtain a great quantity of milk; they select fine cows, which they feed with bran, chippings of bread, and slops, &c.; the cows are constantly confined to the vaccary, and some stables are kept very neat. These dairymen, however, sometimes sustain great losses by a malady (pulmonary phthisis) which breaks out among the beasts, and which is so rapid that considerable vaccaries have been nearly destroyed by it in a short time.

The same effects have been observed in the vaccaries of London. Distinguished physicians of both capitals have inquired whether the phthisis so prevalent in these two cities, may not be augmented by the use of milk produced by an animal that had died of pulmonary tubercles.

During a visit to the farm of Saint Anne, the conversation turning upon this subject between myself and M. Marie, he appeared to think that the regimen adopted for feeding cows, both in Paris and London, contributes to favor the development of this disease, and he stated, in support of his opinion, the result of his establishment, in which he had not lost a single animal with this complaint for many years, while some of his brethren, who had followed a different regimen for their cows, had sustained great losses, although the animals were bought at the same market, and selected with as much skill and judgment as his own.

Among the injudicious practices, for example, which are followed in Paris, the milkmen scarcely ever send the cows out for fresh air, notwithstanding the atmosphere of the stables is always too close and hot, and they prevent their cows from calving, in order to have a greater quantity of milk; the latter practice, united with the others, is, M. Marie's opinion, the most injurious.

This agriculturist, so worthy of praise for the care which he takes in direction of the establishment which he has founded, as well as for the manner in which he turns his experiments to the advantage of his fellow-citizens, has already ascertained that, to obtain a great quantity of good milk, the food must not be stinted, and that it should be varied in such a manner as to sustain the appetite of the animals without cloying them.

The following are his directions for the arrangement of his cattle. Every day the stables must be cleaned and washed with the greatest care, and the cows are let loose in the farm-yard during the sunny hours of winter, and after the heat of the day in summer, in order to give them air. Whenever a cow manifests an inclination for the bull, she is taken to him; and he has observed what is contrary to the general opinion of breeders, that a cow which has been with the bull without effect, may, on a subsequent occasion, be taken to him with advantage.—Among the substances used as food, which seem to have obtained the preference, are the following: carrots, potatoes, (boiled and raw,) beets, turnips, &c.—The malt of beer, so much employed in London, where the use of beer is more extensive than in Paris, does not appear to him to be good food, if given as the principal nourishment. He one year fed his animals with this substance for a few months, and then was

the only time he heard complaints of the quality of his milk.

For some time past he has used, with the utmost success, the remains of potatoes left by the starch makers, which he mixes while hot with the residuum of the distillation of the different substances from which alcohol is obtained. This food is very good for cattle: it is grateful to them, invigorates them, and produces good milk. This other food is that generally recommended and used; and if salt was cheaper, he would give it, but in small quantities. He has, for a long time, adopted in his establishment a very simple means of keeping the dairy and vessels which contain the milk perfectly sweet and wholesome. He has them washed every day in a weak solution of chloride of lime; the milk room is washed with the same liquor, while vessels containing chloride of lime are placed so as to allow of a slight escape into the apartments, of gaseous chlorine.

The use of this chemical agent favors the preservation of the milk, and it has been remarked that it does not change so readily during the heat of summer. The dairy of M. Marie deserves the entire confidence of the public. — *Jour. des Connaiss. Usuelles*, Dec. 1832.

HORTICULTURE.

(From the Plymouth Memorial.)

THE VINE.

I learn by my own observations and by newspaper intelligence, that there has been an unusual deficiency in the production from the vine the past season. It would be gratifying, were some of our skilful cultivators to make us acquainted with the true cause why in some situations the fruit of the vine answers every expectation and desire, while in others there is a total disappointment. I am indeed convinced that foreign grapes cannot be advantageously cultivated in open ground in our climate. This is greatly to be regretted, since the Black Hamburg, Black Cape, Chasselas, Sweet Water, &c. surpass all others in excellence and beauty. These and numerous other luxuries, however, we cheerfully resign to our opulent brethren, who can afford to bestow on them skilful culture and glass-house protection, especially since they are so well disposed to greet our horticultural table with clusters of unrivalled size and richness of quality. Nor do I believe that any length of time will acclimate the foreign vine to our region, if I may judge from trials in some of our gardens of more than thirty years standing, though it must be admitted that they have not been under judicious and skilful management. It has been observed the past season, that the Sweet Water has succeeded best when suffered to run on the ground. In several instances clusters have been found lying on the ground concealed in the grass and weeds that attained to perfect maturity and ripeness, when those trained on trellises and fences were entirely spoiled by mildew. In one instance, eight or ten vines of the Sweet Water have been cultivated without any interruption to their natural course; never pruned nor covered in winter, but allowed to spread over the ground to any extent. The last summer their produce was extraordinary, great expectations were raised. The thick foliage entirely secluded the fruit from the sun, air and dews; but in the end this proved only a partial security, till two thirds of the fruit was destroyed by the mildew, but the residue were fine, well ripened clusters.—In the same garden those trained on trellises, and had received much care and attention, produced none but poor blasted fruit. It seems to be well ascertained that the Isabella is by far the most sure and productive of any other variety, and being a native requires no winter covering. The Catawba grape is also a native, and is attaining to a high reputation as it becomes more known; the fruit is esteemed as preferable in delicious quality to the Isabella. For making wine it is considered superior

to any other grape yet discovered. "This vine," says Mr. Kenrick, "is very vigorous and hardy, requiring no protection, and is a great and certain bearer." These two varieties, being natives, are deserving of preference to all others for cultivation in our gardens in this place, and the fruit which they produce when fully ripe is sufficiently delicious for any palate that has not been pampered with more luxurious dainties. It has been supposed that our native grapes are not liable to the mildew, but the present autumn has furnished many instances of the Isabella being affected with that disease, but chiefly in situations where they are secluded from a free circulation of air. In one instance the vine has spread over a large building and ascended to the eaves of the house; it has this season produced thousands of clusters, all of which were blasted, except a very few bunches near the eaves where the air could have free access to them.—There is in a damp and confined situation a vine that has never received the pruning knife, and has now overspread an apple tree; its produce has been this season remarkably abundant, but all spoiled by mildew, not a single grape fit to be eaten. In an adjoining garden the vines on trellises and pretty closely pruned, have yielded equally abundantly, and the greater proportion of the fruit was free from the disease. In regard to pruning, I consider a judicious use of the pruning knife indispensably necessary, but too close pruning proves injurious.—All superfluous branches should be cut away, and the bearing shoots should be shortened soon after the fruit is formed. We have in our woods a variety of grapes indigenous to our soil, and attempts are making to cultivate them in our gardens, but hitherto without much success, which is probably to be ascribed to the want of the pruning knife. Full one-half of the vines in our woods are barren. I knew a vine that was transferred from its wild state into a garden, while in a bearing condition, which flourished very luxuriantly for more than twenty years without producing fruit, never having been pruned; it was at length cut down and the stock engrafted with the Isabella, which now produces very abundantly. It may be doubted whether transferring the old stocks from our woods should be preferred to propagating the vine by cuttings. A farmer had a number of native vines growing on his farm which had always during his memory been barren, but having cut them down with his scythe, they became abundantly productive the next year.

That voracious reptile, the cankerworm, has proved very destructive to many orchards in this vicinity the last summer, notwithstanding the free application of tar. Major S. Frazier, a skilful agriculturist of Duxbury, has invented a composition which proves a more effectual remedy against the cankerworm than any other which has been before known. It consists of soft soap, whale oil, and common liquid varnish, in equal parts. This is easily applied with a brush, and when repeated occasionally, as it becomes dry, proves very effectual, and is not like tar injurious to trees.—The same composition would probably serve as a protection against the apple tree borer, if applied at the proper season; and also in protecting peach trees from the attack of the fly that deposits her eggs in the bark near the root, from which proceeds the peach tree worm. I have applied it to my young peach trees the past summer, and have no doubt of its utility, as no insects will encounter the odor and tenacity of this substance. In fact, the Frazier compound is, in my opinion, to be considered a valuable acquisition to our remedies against the annoyance of insects.—Peach trees have not in general succeeded well in this place; the cold east winds from our sea-board have a fatal effect on the buds of spring. I have now adopted an expedient, which I hope will in some measure remedy this evil. I have surrounded the trees near the root with a bed of sea weed, which I conceive will preserve the roots both from the effects of excessive frost during winter, and the influence of the vernal sun raising the sap into action too early in the

season.—The sea-weed will, I think, retard the raising the sap, and of course the development of the buds several days later, and the tree will besides derive beneficial effects from the alkali with which the article is impregnated. JAMES THATCHER.

TO PRODUCE ONIONS OF A LARGE SIZE.

The Horticultural Register recommends the following method of obtaining large onions. When the beds are formed by the usual method, tramp them heavily, and roll them firmly. On this compact surface, sow the seed and cover it at the usual depth with a rich compost. The bulbs, instead of sinking will spread superficially to a good size, and ripen earlier.

THE ARTICHOKE.—English medical papers state that this plant has been recently introduced into very important medicinal use particularly in rheumatic and other more acute cases. The Boston Medical Journal says, "the leaves should be gathered before their vitality is affected by the frosts. The fibrous and fleshy portions of them should be cut into strips and by bruising in a marble mortar the juice is readily extracted. In order to preserve this juice, one-fifth part of its weight of alcohol may be added to it, and in this way it is equally valuable for use, if not more so, than when wrought into the more expansive form or tincture."

RURAL ECONOMY.

GENERAL OPERATIONS OF COOKERY.

STEWING.

Stewing differs from roasting and broiling, in the heat being applied to the substance through a small portion of a liquid medium; and, from boiling and frying, in the process being conducted by means of an aqueous, and not by means of an oily fluid. It is necessary that the fire be moderate, for a strong heat suddenly applied would be very injurious. The liquids employed as the medium for applying the heat are usually water, or broth, the quantity of which must be such as shall prevent the meat from burning and adhering to the pan. It is not requisite that the liquid be made to boil in stewing. It should only be raised nearly to a simmering heat, which will retard the fluid being evaporated too quickly. The closeness of the vessel will also prevent the waste of the liquid. If it diminish too quickly, it must, from time to time be replenished.

The management of the fire in cooking, is, in all cases, a matter of importance, but in no case is it so necessary to be attended to as in preparing stews or made dishes: not only the palatableness, but even the strength or richness of all made dishes, seems to depend very much upon the management of the heat employed in cooking them.

The most proper sort of animal food for stewing, are such as abound in fibrine, and which are too dry or too tough for roasting. When beef or mutton is rather old and too coarse flavored, and not tender enough for the spit or the gridiron, it may by stewing be not only rendered tolerably palatable, but even sometimes savory and good. But the stewing process is not confined to flesh of this sort; for veal and other young flesh which abounds in gelatine when properly stewed, is much relished.

The vegetables most usually stewed are carrots, turnips, potatoes, peas, beans, and other leguminous seeds. Some fruits are also cooked in this way.

Rationale.—Stewing is nothing else than boiling by means of a small quantity of an aqueous fluid, and continuing the operation for a long time to render the substance tender, to loosen its texture, to render it more rapid, and to retain and concentrate the most essential parts of animal or vegetable food.

If the stew-pan be close shut, it is evident that none of the nutritive principles can escape, and must either be found in the meat itself or in the liquid.—The water or gravy in which the meat is stewed, being capable of dissolving the gelatine and albumen, the greater part of them become separated during the simmering process. Now, since the firm texture of the bundles of fibres of meat is owing to the solid gelatine and albumen gluing them, as it were together, when they are dissolved and disengaged, the meat must become greatly disorganized. These principles, as well as the fat and osmazone, are partly disengaged, from the meat, and become united with the gravy. It is to these indeed, that the gravy owes all its richness and excellence. The muscular fibres and the tendons acquire a gluey appearance and texture, and the whole forms a savory gelatinous state, *gravy or soup*.

No scorching or browning of the meat takes place if the process is properly conducted: for the temperature to which it is exposed does not exceed the boiling point of water.

In the stewing of vegetables; saccharine matter is formed, the starch and mucilage are rendered soluble, and of course, set free the woody fibre, which either floats through the liquid or adheres together very slightly. It accordingly constitutes either a pasty fluid, or converts the vegetables to a soft pulp; sometimes their original shape being preserved entire, and at other times not.

BOILING.

Boiling is a much more common operation than any of those we have considered, with the exception perhaps of roasting. It consists, as every body knows, in subjecting the material of food to the influence of heat, through the medium of boiling water, or steam.

The water employed for boiling meat or pulse should be soft, and the joint should be put on the fire immersed in cold water, in order that the heat may gradually cause the whole mass to become boiled equally.

If the piece of meat is an unequal thickness, the thinner parts will be overdone before the more massy portion is sufficiently acted on by the boiling water.

Salted meat requires to be very slowly boiled, or simmered only, for a quick and rapid ebullition renders salted provisions extremely hard.

Frozen substances should be thoroughly thawed, and this is best effected by immersing them in cold water.

Count Rumford has taken much pains to impress on the minds of those who exercise the culinary art, the following simple but practical, important fact, namely; that when water begins only to be agitated by the heat of the fire, it is incapable of being made hotter, and that the violent ebullition is nothing more than an unprofitable dissipation of the water in the form of steam, and a considerable waste of fuel.

From the beginning of the process to the end of it, the boiling should be as gentle as possible. Causing any thing to boil violently in any culinary process, is very ill-judged; for it not only does not expedite, in the smallest degree, the process of cooking, but it occasions a most enormous waste of fuel, and by driving away with the steam many of the more volatile and more savoury particles of the ingredients, renders the victuals less good and less palatable. It is not by the bubbling up or *violent boiling*, as it is called, of the water, that culinary operations are expedited.

One of the most essential conditions to be attended to in the boiling of meat, is to skim the pot well, and keep it really boiling, the slower the better. If the skimming be neglected, the coagulated albuminous matter will attach itself to the meat, and spoil the good appearance of it.

It is not necessary to wrap meat or poultry in a cloth, if the pot be carefully skimmed. The general rule of the best cooks is to allow from twenty to thirty minutes slow simmering to a pound of meat, reckoning from the time the pot begins to boil.

The cover of the boiling pot should fit close, to prevent the unnecessary evaporation of the water, and the smoke insinuating itself under the edge of the cover, and communicating to the boiled substance a smoky taste.

Cooks often put a trevet, or plate on the bottom of the boiling pot, to prevent the boiled substance sticking to the pot.

Rationale.—When flesh or fish is boiled in an open vessel, or one not closely covered, the fibrous texture is rendered more tender: at the same time its nutritive quality is not much diminished. For the temperature of the water or steam, never exceeding two hundred and twelve degrees, is insufficient to produce the partial charring, which roasting and broiling effect. But as in stewing, the gelatine, albumen, osmazone, and fat, are developed and disengaged, and becoming united with the liquid in the vessel, form a soup, or broth. The paler color of boiled meat is owing to the blood being separated and diffused in the water. In frying, the boiling fat or oil enters into the interstices of the fibres which the disengaged animal juices have left empty. In boiling, in a similar way, the hot water takes the place of the blood, gelatine, fat and albumen, which have been dissolved and separated from the fibres. The fibres are in this manner soaked and washed, first by the boiling water, and afterwards by the soup or broth which is formed, till the whole texture assumes a softened consistence and pale appearance. It is this, rather than any softening of the fibres themselves, which seems to be the real effect produced, unless, with some, we consider the fibres as nothing more than minute and close-set bundles of blood vessels. This doctrine, however, the experience of every cook will disprove; for if the boiling be long continued, the fibres of the meat will alone remain, and so far from becoming more soft and pulpy, they will become dry and juiceless. If indeed the boiling point of the water be artificially increased to two hundred and twelve degrees, by the pressure applied to the surface of the liquid, the fibres may be reduced to a pulp, quite homogeneous. When this is done by Papin's digester, or by any other apparatus of the same kind, and when the process under such circumstances is long continued, the hardest bones may be converted into jelly.

It is only by boiling that the more gelatinous parts of flesh can be completely extracted unaltered from such parts as are cartilaginous, ligamentous, or tendinous.—*Accum's Cul. Chem.*

CARE OF FARMING TOOLS.

A topic not yet sufficiently enforced on the attention of farmers, is the wasteful negligence evinced in the exposure of agricultural implements to the injuries of the seasons. The sled curling and cracking by the side of the wall in summer, and the cart half buried in snow, and seasoning in the winter storms, are symptoms of waste and extravagance, which will ripen into a consumption, to be hastened to premature termination by the visits of the sheriffs. The whole secret of wealth, consists in economy, and the prudent care of those small rills, which without great vigilance, are slipping through the chinks of the best woven purse; and it may be considered quite as safe to predict that none of these slovenly gentlemen will be prosperous, as to write in the style of the calendar soothsayers, through the printed page of the month of January, "expect snow about these days." The price of the time lost when it is most valuable, in putting the exposed articles in proper repair, not speaking of the cost of the materials and the interruption of business, would defray the expense of erecting ten such cheap sheds as would cover them from the storms, protect them from decay, and keep them ready for immediate use.—*National Egis.*

To take ink spots out of cloth or linen.—Wet immediately the place with lemon or sorrel juice, or with white soap diluted with vinegar.

MISCELLANEOUS.

An excellent Cure for a Sprain.—Take two pieces of red flannel, soak one of them with beef or pork pickle, (beef is best,) and place it on the wrist or ankle sprained, wrap the other piece over it, and the pain will subside in a very short time.

UNIVERSAL EDUCATION.—We are highly gratified to find that this most interesting subject is exciting a degree of attention in some measure proportioned to its importance. A convention for promoting it was lately held in Lexington, Ky. Addresses on the subject were delivered by Dr. Beecher, of Cincinnati, and Drs. Caldwell and Drake of Lexington, which are highly, and we have no doubt, justly applauded by the Kentucky editors. May the excitement thus begun, spread and increase with continually augmenting rapidity, until the whole population of our country shall be aroused to a just sense of the necessity for united, persevering and strenuous exertions, to accomplish this glorious object.—*Jon's Rep.*

DIET OF AGRICULTURAL LABORERS IN SCOTLAND.—On entering the habitation of the cottar, his fare is found to be very simple. In summer, oatmeal porridge with milk for breakfast, potatoes for dinner, and bread and milk or something similar for supper. In winter, porridge, with perhaps a little bit of butter or some treacle, to breakfast; potatoes mashed, cut in slices, and done on the gridiron, and eaten with a very little fish, pork, or a bit of cheese, to dinner; and gruel, with a few potatoes, or a bit of oat or barley bread to supper. His abstinence is nearly complete from tea, coffee, sugar, candles, soap, ale, parliament whiskey, and every taxed commodity, except tobacco, and the nature of the climate has rendered it one of the necessities of life.—*Library of Useful Knowledge.*

COVERING FOR ROOFS.—A new substitute for slates has been adopted in England, and introduced extensively into use. A quantity of lime is slaked in tar, in which sheets of the largest and thickest brown paper are dipped and then laid on in the manner of slating. This is said to make a durable covering, answering every purpose of shingles or slates, and will effectually resist the weather for a great number of years.—*New England Farmer.*

In an orchard belonging to Mr. Pitchard, near Cloddock church, on the Monnow, there are fifteen trees, the produce of which, it has been calculated by old cider makers, will yield from fifteen hundred to two thousand gallons of prime cider. A hogshcad (one hundred gallons) from one tree is reckoned the general maximum quantity; but these trees average considerably more.—*Hereford Times.*

LITTER.—For your barn yards, stables, styes, cow houses, &c. may well be gathered from fallen leaves. It will also be valuable in your yards, &c. as a receptacle for the liquid manure which would otherwise soak into the ground, enrich the highway, or be lost in a neighboring stream.

Why do fowls, if kept confined, lay their eggs without shells?

Because they cannot then get at any earth which contains the material requisite for the shell. Dr. Paris, (in the *Linnaean Transactions*), shows that if the legs of hens be broken, they will lay their eggs without shells until the fracture is repaired; nature employing all the lime in circulation for the purpose of re-uniting the bones.

Why does a flannel covering keep a man warm in winter, and ice from melting in summer?

Because it both prevents the passage of heat from the man, and to the ice.

COLT.—To break him never strike, but often lead him by the side of another horse, with a bridle.—When he walks well bring him to a trot after him; then lead him often in the saddle. Then put on a small weight, and gradually increase it. Then let one hold and another mount him, and ride after another horse in a ploughed field, till he learns the use of the bit, and will stop or go at your pleasure.—By this easy method you will break your colt without breaking his spirit.

BOLTON FARM, NEAR BRISTOL, PENN.

To be Rented.

That part of Bolton farm which is in the occupation of the present tenant, containing one hundred and twenty acres of land, more or less, including the tenant's house, one of the best barns in Pennsylvania, an orchard of five hundred apple trees of the best fruit, cider press, mill, &c. &c. will be rented to a tenant who can be well recommended as a suitable person to provide and keep on the farm, only the best selection of every description of stock, and who is capable of managing a first rate grain and dairy farm. The object of the proprietor is, to introduce into his neighborhood the practice of raising exclusively, the best of every description of stock, for which purpose Bolton farm is well adapted by the proper proportions of meadow and upland, its conveniences for summer and winter, and its position for facility of transportation by the Delaware canal, and Bristol and Philadelphia Rail-road. For further particulars apply to the subscriber on the premises. JAMES P. MORRIS.

Dec. 20, 1833.

31.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

I. I. HITCHCOCK,

American Farmer Establishment.

CLOVERSEED—AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price for it. Address

I. I. HITCHCOCK,

Amer. Farmer Establishment.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK,

American Farmer Establishment.

JACK.

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

Address

I. I. HITCHCOCK,

American Farmer Establishment.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$200—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK.

YOUNG HECTOR.

For sale, the beautiful bull Young Hector, 17 months old, three-fourths Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK,

American Farmer Establishment.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

NEW CHINESE MULBERRY.

(Morus Multicaulis.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK,

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Ailanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ————Rappahannock, 3.00 a 4.50.—Kentucky, 4.50 a 8.00. The inspections of the week comprise 332 hhds. Maryland; 47 hhds. Ohio; and 1 hhd. Pennsylvania—total 380 hhds.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5.12½ a —; (wagon price, 5.00 a —) city mills, 5.25 a —; city mills, extra, 5.62½ a — CORN MEAL, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—GRAIN, red wheat, 1.00 a — white do 1.15 a 1.20.—Corn, old yellow, 50 a 51; white, 47 a 48; in the ear, — a — per bbl.; Rye, 65 a 66; chop rye, per 100 lbs. 1.50 a — OATS, 35 a 36.—BEANS, 1.50 a —.—Peas, red eye, 60 a —; black eye, 75 a —; flady peas, 1.00 a —.—CLOVERSEED, 4.00 a 5.00; TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a — Lucerne 37½ a — lb.—BARLEY, — a — FLAXSEED, 1.62½ a 1.70.—COTTON, Va. 12 a 13; Lou. 14 a 15; Ala. 12½ a 14; Tenn. 12 a 13; Upland 12½ a 14 —WHISKEY, hhds. 1st p. 26 a —; in bbls. 22 a —.—Wool, Washed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleeced, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24 —HEMP, Russia, ton, \$165 a 185; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 37½ a —; Plaster Paris, per ton, 3.75 a —; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 5.00 a 6.00.—Oak wood, 3.00 a 3.50; Hickory, 4.50 a 4.75; Pine, 2.50 a 2.75.

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Editorial, The New Year; Culture of the Sugar Cane; The Chinese Mulberry; Suggestions on Improving the staple on Cotton, by the use of salt as a manure—On the Cultivation of the Sugar Cane, its Origin and History, Botanical Character and description; Culture in Louisiana—Culture of Potatoes—Great Yield of Apples from one tree—Cure for Oxen strained by overdrawing—On Breaking Steers and Colts—Management of Colts—Observations on the manner of nourishing Milch Cows in Paris—On the Culture of the Vine—To produce Onions of a large size—The Artichoke—General Observations on Cookery—Care of Farming Tools—Cure for a Sprain—Education—Diet of Agricultural Laborers in Scotland—Covering for Roofs—Scraps—Prices Current of Country Produce in the Baltimore Market—Advertisements.

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Edited and published by I. Irvine Hitchcock, is issued every Friday from the "Establishment," No. 16 South Calvert street, Baltimore, Md.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.
2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.
3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.
4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.
5. DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, I. Irvine Hitchcock, Baltimore, Md.

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THE FARMER.

BALTIMORE, FRIDAY, JAN. 10, 1834.

GRAPEVINES—Scuppernon and others.—From several letters sent us by a much esteemed friend in North Carolina, we have extracted the following observations relating to grapevines, he being a practical farmer, who gives great attention to the cultivation of the vine, with a view to the making of wine. He has obligingly promised us for a future number a more ample chapter on his practice and experience. He will also send us for sale, a few of the vines of the various kinds here mentioned, and others in time for spring planting, of which we will give due notice when received.

The following remarks were not written for publication, but occur casually in many parts of his business letters; but as they seem to us worth extracting for the benefit of our readers, we have ventured to take this liberty for which we hope he will excuse us.

"The scuppernon vine will not commonly grow from cuttings, a better, nay, the best method of propagating it, is by burying the branches, leaving one bud or more above ground in wet weather during the spring and summer, they are then well rooted by the following fall. Those who have not witnessed this method would be surprised on seeing to what size the roots will grow in one season, frequently from two to four feet long, appearing as if at least two years old. Some which were thus planted in the spring leaving one bud above ground grew by fall to 8, 10 and more feet in length, and the following season produced some fruit. Scuppernon vines having even the smallest root will always grow on being transplanted, indeed it seems nearly immaterial whether they have one or many, large or small roots."

"I have two varieties of the scuppernon, the white and the black, mostly the former which is the genuine variety, or that principally cultivated in the native place of the scuppernon, the lower part of this state. In propagating from the seed the black variety is generally produced. I have however now in bearing a white variety, which I call the white muscadine. The fruit resembles in taste the common muscadine. It is a good grape but I think inferior to the genuine."

"The scuppernon I believe does better without any trimming, except that at first growth, necessary to prevent its becoming bushy. It seems to delight unchecked, to spread high and far over scaffolding, the hardest freezing I believe never injures it. The only difficulty I apprehend in regard to its success, at the North (not probably in Baltimore) is the chance of its not maturing its fruit sufficiently early. But there is no such difficulty in regard to the Halifax grape. It ripens early. This grape is also a great bearer, very hardy, and very rapid and luxuriant, in its growth, of which you may judge when I assure you that one which I grafted into a native stock in my vineyard in the spring of 1832, grew that season near thirty feet, and the past summer has produced more than half a bushel of grapes. The fruit is a round purple grape not quite as large as the Catawba, but it grows in larger clusters; indeed these are uncommonly large and similar in shape to what is called here the common bunch grape, or the frost grape of the north. The fruit is finely flavored and I have reason to believe excellent for wine, as well as for table use."

"The cobs-wine from the banks of the Ohio, so famous for producing fine kinds of native grapes, is similar to the Halifax in growth, bearing properties, and clusters, but is a larger grape than the Catawba. Its flavor is peculiar and much admired."

"The Schuylkill muscadine or Pennsylvania Madeira, is one of the tried kinds that best endure the hard winters in that state."

No. 44.—Vol. 15.

EMPLOYMENT INDISPENSABLE TO COMFORT.—In a very interesting article on the philosophical history of hypochondriasis and hysteria, in the 23d number of the *Foreign Quarterly Review* for July, 1833, is the following passage: (p. 117.)

"It is some disappointment to a humane person to find, that, of all men who are discontented with their lot, none exceed in the quantity of their grumbling, and in the habit of looking on the wrong side of things, and in a proclivity [propensity] to hypochondriacal imaginations, the old pensioners of the army and navy at Chelsea and Greenwich. Placed above the fear of want, but deprived of all motive to exertion; neither moved by hope nor by fear, for they have neither promotion to look to, nor disgrace to apprehend; they are miserable, precisely because they have nothing to do. We have often thought that some gentle duties, analogous to the former habits of the lives of these deserving old men, would be a great blessing to them."

On this subject London, the conductor of the *Gardener's Magazine*, makes the following suggestion:—

"Now, we would suggest that to every hospital there should be attached a garden, sufficiently extensive to occupy in its culture all the inmates. Though this sort of occupation might not be 'analogous to the former habits' of these inmates, yet we are persuaded that it is so natural, that they would soon not only become accustomed to it, but fond of it. Why should not the whole of the vacant ground at Chelsea Hospital be turned into a garden, and put under the care of a good gardener, who would direct the labors of such of the pensioners as were able to work in it?"

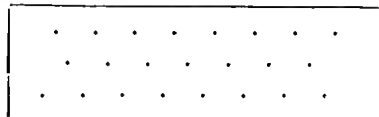
CORN SHUCK MATTRESSES.

Greene County, Alabama, Dec. 19th, 1833.

MR. HITCHCOCK:

I observe in the *Farmer* of the 8th Nov. a request that the "best mode of making Corn Shuck Mattresses" shall be contributed. I do not know that I can give you the "best" mode, but I can give you one which answers an excellent purpose.

The only art consists in the preparation of the shucks; the mattress being then made in the usual way by stitching the tick or covering in squares of 12 or 14 inches. The shucks are prepared by *hickling*. The *hackle* is made by driving iron spikes, (10d nails) made sharp at one end, through a small piece of plank, 12 inches long and 5 inches broad. Three rows of holes, to accommodate the nails, are formed so that in drawing the shucks across them they may split the shucks in different parts, and no two nails follow each other. Thus,



When these holes are thus made, drive in the nails till they project 2 inches above the board. Let the board be fastened securely to a block or bench, and you have the only instrument necessary to prepare the materials. To use it requires but little skill, which will be acquired by a few trials. The shucks must be freed from the hard and solid part of the stalk end, to which their folds are attached. Take as much as the hand can well grasp, and force it upon the hackle by pressing at each end, so as to make the nails penetrate through it; then draw the shucks forcibly across it. Repeat this operation, changing ends, till the shucks are split into fibres. When thus prepared they are used precisely as hair is used in mattress-making, being equally distributed in every part of the tick by a long awl, and then stitched as above directed. This is the most approved method in use among us. It is cheap, simple and expeditious.

I have used mattresses made of shucks cut across in short pieces. These are not so good. They soon

become closely compressed, and hard, and uncomfortable, losing all their elasticity. When made as above recommended, their elasticity continues for years. I much prefer corn shucks, for this reason, to the long moss, an article in very general use among us.

Shuck mattresses have one disagreeable quality: they are very noisy when you move the least on them, which is intolerable on some occasions. To prevent this rustling noise, I have found a thin layer of refuse cotton on either side of the shucks effectual. A mattress thus made is much cheaper, and in no wise inferior in comfort to wool or hair mattresses.

Respectfully,

A SUBSCRIBER.

IMPROVEMENT OF CANAL NAVIGATION.—By recent experiments, it appears to be well tested, (paradoxical as it may seem,) that boats propelled on canals at a greater speed than ten miles per hour, will not waste or otherwise injure the banks, as much as boats propelled at from four to seven miles per hour.

This fact we have been satisfied of for several years past, and have seen some experiments tried to prove it. Within a short time past, if we are correctly informed, this principle has been so well established in Scotland, that boats now ply on the Forth and Clyde canal, propelled by steam, at a rapid rate.

We are pleased to learn that a company in Philadelphia are about building a boat on a similar plan, to navigate the Chesapeake and Delaware canal.

We think Mr. Burden's sea serpent steamboat plan will be admirably calculated for rapid canal traveling. It may be worth while for those interested in canals to turn their attention to the subject.—This is the age of improvements.—*Am. System.*

GRAPES.—The Westchester (Pa.) Register says, that a vine is growing in the garden of Mr. Darlington of West Town, which bore grapes the present year, of which one measured 3½ inches in circumference, and weighed 122 grains, (about 47 grapes to the pound.)—[Was this grape of a native or foreign stock, and of what species?—He has another vine, that was transplanted in the spring of 1827, from which were gathered 3057 bunches, many of which were from 9 to 11 inches long, with a branch from the upper part of the bunch nearly half as large as the main bunch. The last mentioned is a native or chicken grape.]

VALUE OF THE ERIE CANAL.—The convention of delegates from some of the southern counties of New York, which lately assembled in the city of New York, state in their report that the Erie canal has "added a million of population and one hundred millions of value to the state!"—*Fred. Examiner.*

IMPORTANT TO MILKMEN.—By a variety of experiments it has been ascertained, that milk placed in vessels made of zinc increase the quantity of cream beyond what can be obtained in vessels of the ordinary kind. The quantity of butter obtained is computed at one third more — ? *Goodsell's Gen. Farm.*

Mr. William Carver, one of the oldest and most experienced Farriers of this city, who has written many newspaper articles and pamphlets against cruelty to horses, says:—"No horse is worth so much by twenty-five per cent. with his tail cut off."

[Philad. paper.]

Why are white hats and dresses worn in summer?
Because dark colors absorb most heat; white, therefore, repels most heat, and is cooler wear. A white dress in winter is good, because it radiates or receives little heat. Polar animals have generally light furs. White horses are both less heated in the sun, and less chilled in winter, than those of darker hues.

AGRICULTURE.

(From the Sugar Cane Manual.)

THE SUGAR CANE.

(Continued from page 340.)

IMPROVEMENTS SUGGESTED IN PLANTING, IN LOUISIANA.

The draining of the land, notwithstanding the importance attached to it in Louisiana, still merits from sugar planters generally, a higher degree of attention than it has received. It is only when the drains are sufficiently frequent and deep, and carried far back into the swamps, that the land can be delivered, with the requisite rapidity, of the water from rains, and the filtration which takes place through the banks of the river during the spring, when its level is above that of the land. Unless the land is capable of rapid drainage, it is impossible to deprive it of its coldness and clamminess; both of which are hostile to the early budding of the cane plants. During the summer, also, it is noticed that cane on land well drained, endures the drought much better than on land imperfectly freed of its water; which may be owing to the reason that the surface of badly drained, clayey soils, is compact and hard—which condition prevents the communication of moisture from below upward, in that free and uniform manner that takes place when the upper stratum is more light and open. Besides, in the latter part of the season, the standing of water in the cane fields tends, in no inconsiderable degree, to weaken the strength of the juice. Imperfect draining also enhances the labor of harvesting.

The value of animal manure, duly mingled with decayed vegetable matter, has not hitherto been duly appreciated. There are few considerable estates where fewer than one hundred head of cattle, including horses and mules, are kept; and yet the economical arrangement of *cattle pens*, where the bagasse and other vegetable matter might be formed into manure, is unknown. This is the more surprising, since in a clayey, impalpable soil, like that of Louisiana, nothing can be of higher importance than the addition of light, imperfectly comminuted, vegetable matter. Ashes and shells would also prove beneficial to the land; although the effects of the latter would be less apparent. The operation of these amendments would obviously be, to keep the soil open and free for the admission of air, and the due evaporation of moisture,—conditions of the first importance to the rooting of the plants, and consequently to the growth and maturity of the crop.

The preference so generally expressed for early planting would appear to be extremely well founded in theory; inasmuch as the ground in the autumn is in fine condition for the shooting of the roots, which, when once thrown out, prepare the plant for an early start in the spring. Besides, upon this plan, much time is saved, which, in the ordinary way, is consumed in forming mattresses, and in the repeated handling of the cane.

In vindication of the mode of thick planting, however, nothing but experience appears capable of being urged; and whether it is clearly established on this basis admits of a doubt. It appears reasonable to expect that the rich soil of the Mississippi will afford a greater weight of cane from the adoption of this system; and that the amount of sugar may be as great, or even greater, may also be true; but that the quantity of water to be evaporated must be abundantly greater in proportion to the weight of the cane, and consequently the labor of harvesting be greatly augmented, would appear equally obvious. When a great number of shoots are encouraged in their growth from a small space of ground, they are of course hindered from

spreading their leaves at bottom, they draw each other up to a great height, and are filled with watery juice,—the sun and external air being excluded from the stalks, both of which are necessary to ripen and elaborate the sugar during the growth of the canes.

We should be strongly disposed to adopt a system of wider planting; say, in well cultivated lands, five feet apart for the furrows, to lay the canes in the drill in single rows, to prevent them from suckering by the use of the knife, and in this manner to reduce the number of stalks upon a given piece of ground, from one-third to one-half. By thus giving free access to the sun and air, we should expect that the canes would afford a vastly greater yield of sugar; that they would arrive much sooner at maturity; and that the evaporation of the juice would be attended with a great saving of labor and fuel. This method appears at least worthy of trial for a part of the crop; and especially on those estates not infested with the nut-grass (*Cyperus hydra*.) Fields, planted according to this method, might not withstand so successfully the effects of a severe frost, as those on the common plan; and might require more hoeing and ploughing to keep down grass and weeds, as these also thrive in proportion to light and heat. But a large part of the crop is secured before the access of injurious frosts; and if by adopting this method, the cane could be made to attain an earlier maturity, it might be possible to complete the grinding, more frequently than is at present practicable, without exposure to an accident from this source. A cane field planted in the open manner alluded to, would be in no greater danger from winds than one more thickly planted, inasmuch as the rooting of the canes would be stronger, and the stalks themselves would possess more strength, and thus enable them the more effectually to offer resistance to storms.

Although the most successful sugar planters testify in favor of planting with ratoon canes, and not with succulent plant canes and tops, still the latter practice is general. To say the least, this system is not countenanced by experience in other branches of agriculture; for it is well known, that it is by carefully propagating all kinds of esculent plants, either in the choice of the best seeds or cuttings, that most of the species have been so greatly improved. By planting the lower part of well ripened canes, less luxuriant shoots would no doubt be obtained; but their juice would be less crude, and more rich in saccharine matter, while, at the same time, the sugar would be obtained by less boiling than that of the canes, reared in the manner in which they are commonly planted.

In ploughing the land for planting, it is important to turn up the surface completely, unless it be in new land; the practice of merely running a furrow between the old rows, is liable to be attended with the loss of many canes, from the flowing in of water, which rots the plants.

When it is impossible to plant land in the autumn, it is attended with a decided advantage to plough up the soil as early as possible, in order that it may remain exposed to the effects of frost and rains, till the planting can be done.

In ploughing the cane fields at the season of hoeing, it is advisable not to plough deep, especially for the last hoeing, or *hilling*, as it is called; for there is great danger of disturbing the roots, which, by the time the cane is twenty or twenty-four inches high, extend far into the alleys.

Against the practice of cutting down the cane when killed by frost, to preserve it the longer for grinding, no objection can be urged; it should not be resorted to, however, prematurely; for if cut down when green, its buds will be liable to swell; but if the top leaves are killed, and the uppermost buds injured, it will still be prudent to let it stand

for several days, until vegetation is seen to be entirely checked in the lower joints, after which it may be cut.

It is strongly to be hoped that some variety of the sugar cane will yet be produced, that shall suit the exigencies of the climate. That either of the present varieties will fully answer the requisition, is at least doubtful. Numerous observations go to prove, that each variety of plants, in consequence of a structure which no artificial treatment can affect, is capable of supporting only a limited temperature. De Candolle does not allow that plants coming from seed produced in countries into which the plants have been introduced, are more hardy than those derived from seeds brought from the country in which they are indigenous. But it is a well known fact, that culture gives rise to varieties which never did, and never can exist, in a state of nature; and which possess, in the structure of their tissues, unequal degrees of susceptibility to temperature. Such varieties are all hybrids of other varieties. In this way, potatoes have been obtained, whose entire vegetation occupies only three months; and olives, which sustain a severer cold than those of France. The artificial culture in the United States of all the varieties of the cane, is, therefore, deserving of the greatest attention; and if judiciously persevered in, holds out ample encouragement that varieties will eventually be produced, perfectly adapted to the climate of the southern states.

The preservation of cane in mattresses is attended with little difficulty, provided the precaution be taken of placing the canes flat on the ground, which should be scraped smooth for their reception,—laying the butts of the canes as nearly as possible to the north-west, in order to prevent the cold wind from that quarter from penetrating the bed. It has been found useful, also, to make the bed as flat as possible, that each cane may be nearly in contact with the earth.

In planting the canes, care should be taken to lay the eyes toward the sides of the drills; and to avoid placing them so that the eyes shall be alternately up and down. This attention will demand more time, but it will ensure the canes being placed at proper distances from each other, and greatly promote the shooting of the eyes; since, when the canes are not placed in the way here recommended, those buds which are uppermost, occasionally perish from frost, while those underneath have an unnecessary resistance to encounter in shooting downwards, and curving round to gain the upright position, in effecting which, a very slight obstacle causes them to fail altogether.

In concluding this part of the subject, it may not be unsuitable to introduce a few remarks upon the transportation of cane to the mill. The carting of cane with oxen, horses and mules in the ordinary way, is felt to be the most severe and onerous operation of the cane crop, on account of the great bulk and weight of the canes and the heaviness of the roads during the rains. With a view to remedy this inconvenience, Madame Poeyferré has, at the recommendation of Mr. Edmond Forstall, caused a permanent rail to be laid down through the centre of her plantation,—the land on each side being 32 acres wide. The iron rails are in 12 feet pieces, each weighing 56 pounds. They are fitted to the most obtuse angle of timbers formed from sawing, diagonally, 6 inch cypress scantling. This rail is to be furnished with 6 acres of moveable rail;—the iron projecting beyond the wood at one end of the 12 foot pieces and the wood at the other, so that when laid down, the iron rails meet: its use will be to bring in the canes from either side, to the permanent rail. Forty-two arpents of the permanent rail were in operation the last season; the convenience of which, not only in bringing in the cane, but also in delivering the wood from the swamp at the sugar

house, was found to be very great. It cost \$100 per arpent. The expense of the moveable rail will not exceed \$70 the arpent.

This is, unquestionably, a capital improvement in the management of sugar estates in Louisiana; but it is highly deserving of attention, whether a cheaper construction would not equally answer the purpose. Mr. J. H. Cowper, of Georgia, employs a moveable rail, wholly constructed of wood; of which he is able to lay down more than a mile and a half. The cross pieces are 4 feet apart, over which the horses, in drawing the cars, soon learn to step, without the least embarrassment. He informs us that its cost is not above \$100 the mile.

CULTURE IN GEORGIA AND EAST FLORIDA.

The difference in the culture of the cane between these regions and Louisiana, arises chiefly out of soil. The lands upon which the cane is here cultivated are either *tide swamp*, *inland swamp*, or *hammocks*. The tide swamp land is situated directly upon rivers, and is drained by the construction of a bank, or levy, and the excavation of a large canal, through the centre of any considerable tract, say from 400 to 1000 acres, which often runs back a mile or more from the river. The canal is connected with the river by lock gates adapted to the passing of flat boats at the highest stages of the tide, and it serves also for the draining of the land situated far back from the river. Other considerable ditches also occur at various distances, upon a plantation of swamp-tide land, each having its gate for communication with the river. So low and flat are these lands, that they are capable of being laid under water, at particular stages of every tide, which eminently fits them for the rice culture to which they are chiefly devoted. They are, however, to some extent, devoted to the cane, which is planted in rotation with cotton and rice. The inland swamp constitutes tracts from 100 to several thousand acres, situated at low levels, completely environed with pine lands, excepting an outlet to some river or small stream. It is drained with considerable difficulty, by deepening the outlet and intersecting the swamp with ditches. The third class of cane land is formed by what are called *hammocks*. These are situated between the swamp and the pine lands, forming belts or borders of various degrees of thickness, and characterized by the natural growth of large evergreen oaks, hickory, red bay, magnolia, and cabbage-palmetto. The soil is, in some measure, intermediate between that of the swamp and pine lands, but nevertheless abounds with a dark vegetable mold.

The mode of planting in this region differs somewhat from that of Louisiana; inasmuch as the softness of the swamp land prevents the free use of the plough: the hoe is therefore of necessity, more extensively employed in the working of such land. The canes are, moreover, planted in rows wider apart, and the cuttings are less numerous in the row. But a difference still more remarkable arises out of the use of manures. Vegetable and animal manures are introduced so as to form beds, after the manner adopted in cotton planting, the canes being planted in a drill upon the top of the beds. They construct their mattresses of seed cane also in a manner different from the Louisiana planters. The cane is thrown into windrows in the alleys, two rows forming a windrow, where, after wilting for two or three days, it is covered four or five inches deep with dirt.

The failure of ratoons in Georgia is very common; in consequence of which, they are rarely suffered to run above one year; and on rice land, where the cane is employed for the purpose of procuring a rotation of crops, it is rarely suffered to ratoon at all. The Red Ribbon variety is in the most extensive use; although in Florida they em-

ploy the Creole and Otahite to the same or even greater extent than it is used in Louisiana.

REMARKS AND SUGGESTIONS IN RELATION TO PLANTING IN GEORGIA AND EAST FLORIDA.

In advancing suggestions for the benefit of the sugar planters of this district, perhaps nothing, so well worthy of consideration, can be presented as the remarks of Mr. James H. Cowper, of Hopeton, whose scientific attainments and experience in planting, eminently qualify him for treating the subject. In an unpublished memoir, from which he obligingly permitted us to make extracts, he says, "It is believed that the cane can be cultivated profitably on the seaboard of Georgia, in rich lands which can be well drained. To ensure success, such an apparatus must be procured, and such facilities for harvesting provided, as to take off the crop between the 1st of November and the 15th of December. It will be unsafe to calculate on a longer grinding season. To enable the planter to accomplish this, he should not plant more than half his crop in cane. This will enable him to apply a double force to the harvesting of the cane crop, prevent his land being exhausted by the continual succession of the same crop, and facilitate all his operations during the year.

"Under the circumstances above mentioned, it is believed that the cane crop will, on an average of several years, be more profitable than either cotton or rice: but enormous profits are not to be expected from it in this climate. The chief value is, in offering a third plant yielding a rich return, to be combined with rice and cotton; thus extending the system of rotation another year.

"The cane crop, being in a great measure exempt from the fatal effects of fall gales, gives a very desirable security to the planter against a total loss of crops, should they occur.

"The investment of capital in machinery is not greater for cane than for rice, when the latter is pounded on the plantation: it is however far greater than for cotton; and this circumstance should operate against any attempt to enter into the cultivation of the cane except on a scale of 100 to 200 acres, and under the advantages of rich soil and efficient drainage. If undertaken on a small scale, without sufficient machinery and without adequate preparation for transportation, failure may be expected as the certain result, and accompanied with a great waste and expenditure of labor."

It is deserving of trial whether ratoons of two years cannot be made to grow in Georgia with the same advantage as in Louisiana, by observing the precaution to run a furrow in autumn along upon the side of the rows so as to bury the buds which are nearest to the surface, and in this way to defend them from the severest frosts, by which they seem more liable to receive injury, on account of the lightness of the soils.

In preparing inland swamps for the cane, complaint is often made of the acidity or sourness of the land,—a condition which depends upon the incomplete decomposition of the vegetable matter it contains. The most speedy remedy for such soil consists in opening it to the sun, by effectual ditching and burning, and by the addition of a dressing of ashes, or of quicklime.

We shall add still farther, from the directions of Mr. Cowper: "If the field has been planted the previous year in cotton, the cotton beds are shaved down into the alleys, covering the trash, &c., and forming a wide list. In performing this operation, care must be taken that the earth over the vegetable list is sufficiently deep to afford a moist and close foundation, for the cane planted, may otherwise from a deficiency of moisture, or the access of the air, take the dry rot.

"The canes should be cut in short pieces, so as

never to exceed 34 feet, as the buds which come forward first, monopolize the whole sap." "Another reason for planting the cane in short pieces is, that, sometimes, from the action of moisture and heat, the canes bend, if in long pieces, and the extremities are lifted out of the ground, and so prevented from budding."

Mr. C. says that plants should not be covered above 1 or 1½ inches, and that the closeness is more important than the depth of the covering. On friable, clay lands, he has found half an inch sufficiently deep, even in the coldest winter. The prevalent error, he believes to be, in covering too deep. When the soil is wet and the planting is deep, they are very liable to rot. His four requisites, in planting, are the following: 1. Have the soil well drained and in fine tilth; 2. Sound seed; 3. Light but careful covering, closely pressed to the canes; 4. Placing the canes an inch or two below the level of the land, so as to insure the lower sides being in close contact with a moist but not wet soil. Mr. C. says, the earlier the operation of planting is performed, the better, as the canes are safe when planted; they are slowly throwing out roots during winter to support the shoots in the spring,—the soil is more moist, and therefore better adapted to receive the plants in winter than in spring, and the buds being then undeveloped, there is no risk of breaking off the shoots of which there will be danger, if the planting is postponed until spring.

Of the comparative value of the different kinds of lands in Georgia and East Florida for the cane, it may be remarked, that the hammock lands are the best. They are lighter, warmer and drier, and afford to the cane a much more perfect maturity. The sugar they yield is superior to any produced in the United States, and approaches very closely to the best samples from the West Indies. That from inland swamps, and tide swamps is softer grained, and frees itself less perfectly from molasses, of which it affords a much greater proportionate yield.

One of the earliest cultivators of sugar in this part of the United States, Mr. Thomas Spalding, of Sapello Island, who, upon the subject under consideration, has communicated a number of highly interesting articles to the southern agriculturists, remarking upon this point, in one of his papers, says:—"The alluvion soils of the river, or the lower grounds upon creeks will, no doubt, produce a much superior growth of cane; from which, however, it is more difficult to make the sugar, and the sugar of which is always inferior. Every day's experience satisfies me that lighter soils will in the end be more profitable, while they are certainly cultivated with less labor to men and animals, than those of a heavier quality. If, however, river lands, or low lands of any description are selected, upon such I would unquestionably plant the Ribbon cane; because on these soils, the juices are more abundant, than upon lighter lands, which removes one of the material objections to this cane; and its ripening in the month of October, enables the cultivator to get off a great portion of his crop."

(To be continued.)

Why is woollen cloth advantageous?

Because of the readiness with which it allows the perspiration to escape through its texture, its power of preserving warmth to the skin under all circumstances, the difficulty of making it wet through, the slowness with which it conducts heat, and the softness, lightness, and pliancy of its texture.

Why are blankets so called?

Because they were first made in 1340, by one Thomas Blanket, and some other inhabitants of Bristol.

Death is the ultimate boundary of human matters.

DOMESTIC ANIMALS.

(From the Genesee Farmer.)

IMPROVED STOCK.

There is perhaps no portion of agricultural capital which needs improvement, and that of the most thorough kind, more than the cattle of Western New-York. Our breeds of cattle are, to be sure, in some places, and among a small portion of our farmers, respectable; but as a whole, we are lamentably deficient in that attention to them which shall produce the most profit, either of carcase, milk, or labor, with the least possible expense. Taking it for a general rule that a poor animal consumes as much food and requires equal attention with a good one, it will be readily seen that much loss is suffered in not propagating the best kinds of stock. This not only relates to cattle, but to horses, sheep, hogs, poultry, and all kinds of domestic animals.

Many farmers may reply, that "mine is a wheat farm, I only keep stock for convenience, and cannot afford to buy fine breeds of cattle for what little I want. I only keep 6 or 8 cows, and a couple of pair of oxen, and it is no object for me to go into the business." But fair and softly, friend. Would you not rate off your stock-growing neighbor roundly, who only raises what wheat he wants for his own family, if you should offer him clean plump seed, and he should answer, "Mine is a stock farm, I only raise my own bread, and I can't bother with your flint wheat, and all that matter. Wheat that is half smut and chaff, will answer my purpose just as well, for no one eats it but my own family." Surely this man would be called a fool. But the case is as reasonable in one instance as the other. And I lay it down as a standard rule, that any farmer in selecting his stock, be it never so little, and without the least view of disposing of it, should always get the best breeds and animals that he conveniently can.

Now, what are the best breeds of cattle for the farmer to raise?

To this question many different answers will be given according to preference, prejudice, judgment, and taste, of different breeders, and the uses for which the animals are to be appropriated. For the same purposes, some prefer the Devon to the Durham, and even to all others. Some prefer the Durham to any of whatever quality; and others again prefer the best native breeds to either. I have carefully compared the written opinions of John Hare Powell, Esq., Mr. Featherstonhaugh, Gov. Lincoln, and other eminent breeders of the Durham, as well as those of Lord Somerville, Mr. Coke, and the Messrs. Hurlbut, and others, breeders of the Devon; and again the opinions of sundry individuals on the varied merits of the Hollderness, Dutch, and Alderney, which I look upon as of minor importance, and merged pretty much in the more prominent characteristics of the Shorthorn Durham. I have also had many conversations with numerous practical farmers and breeders, who I find hold the same varieties of opinion with the writers above named. And I have seen these different breeds of cattle with their perfections and defects, and their fine and coarse points. I am not as yet a breeder of either, but am about commencing in the business, and have taken much pains to examine different stocks, and satisfy myself of the advantages of the improved breeds, as they are termed, over each other, and of all over the common cattle of our country. I therefore have examined the subject impartially, and with a view to elicit the truth, and promote my own best interests.

In discussing this subject, it is not necessary to go into a description of the different class of animals above referred to. It is a matter of too great bulk for the present essay, and for which I feel incompetent. I presume all who have made cattle a study, fully understand the different qualities of the various breeds under discussion.

We will compare, for a few moments, the opinions of different breeders on the Durham and Devon cattle. In addition to the authority before quoted, of their preference to the Shorthorned Durham, I will add an extract from a letter lately received from a friend in Albany, who is a dealer in and breeder of cattle, sheep, and swine. I esteem him an excellent judge of stock, and believe he would express no opinion but what is founded on his best judgment. He says:

"In looking over some books, I found the following account of the quantity of milk given by certain imported Shorthorns, viz:

"Yellow Rose," at 3 years old, 36 quarts per day.

do. do. 4 "CS" " "

"Red Daisy" gave 32 quarts per day.

"Magdalena" " 32 do. do.

"Wildair" " 32 do. do.

"Western Lady" 23 do. do. (dam of J. H.

Powell's "Malcolm.")

"Venus," at 16 years old, 26 quarts per day.

"Alfred" gave 24 quarts per day—"Yarn" the same.

"Old Daisy" gave 32 do. do.

"Adelia" (first calf) gave 24 do. do.

"Gov. Lincoln's half Denton" cow has often given from 24 to 27 quarts of milk per day of excellent quality. The least quantity of milk given by her in any one day during the summer drouth on grass feed only, was 13 quarts. How will these compare with the same number of your best native cows?

"I feel perfectly satisfied that the improved Shorthorns will keep in fine order upon the same quantity of food which, when given to animals of three-fourths their weight, will not be found sufficient to produce the same effects. This I state from actual experiment, and consider the observation perfectly just, as applied not only to my own animals, but to the breed generally.

"Taking this breed in every point of view, I consider them better adapted to the use of farmers than any other I am acquainted with. They arrive at maturity early, feed quick, are good milkers, and are exceedingly kind and docile.† They have more weight in the more important points, and have much less offal than any other cattle.

"I am aware that cattle with *short horns*, but without *pedigree*, *properties*, or *points*, of the *Improved Breed*, although sometimes purchased at great cost, have been condemned as unthrifty and ill adapted for this country. And I am also aware that some of them which have been imported with *defective* pedigrees, have been excelled, but they should not be considered as specimens of the *Improved Breed*.

"Every farmer who has animals worthy of being selected and reserved as propagators of this kind, should name them, and accurately note their ages and pedigrees. Extracts from 'Stock Registers' thus furnished and recorded, would effectually constitute a 'Herd-book' of authority for general reference, preventing imposition—giving greater value to the good—excluding the spurious, and serving effectually the fair purposes and laudable object of both venders and purchasers.

"The Shorthorns are uniformly docile and gentle in the extreme. The bulls scarcely ever becoming mischievous, and the cows and heifers permitting access under all circumstances, and for every needful purpose."

He further says:

"I send you the following extract of a letter to an American from George Coats, Esq., the publisher of the 'Herd Book' in England:

"I trust the imported Shorthorn cattle will be found to be of great use and benefit to the breeders of cattle in the United States. In this country they are held

* Denton was a celebrated Durham Shorthorn bull imported into Boston many years ago. ULMES.

† The wildest and most vicious cow I ever saw, was a three year old 15-16ths blood Shorthorn Durham. ULMES.

in the highest estimation. The present Chancellor of the Exchequer, Lord Althorp, has a very numerous and valuable herd of them. His lordship is a great friend to agricultural pursuits, and also a practical farmer."

Again he says:

"My white cow 'Dolcibella' has brought me a heifer calf, such an one as I have never before witnessed, and to give you some idea of the estimation in which I hold it, I inform you that I refused, when less than 24 hours old, fifty dollars for her! How would a Devonshire calf look by the side of that? * ' is glad to get \$50 for one of his two years old Devons."

So much for him of Bement's Hotel in Albany.

This may be called a fair specimen of the opinions of the advocates of Durham Shorthorns. Now hear what says Mr. Hurlbut, of Winchester, Connecticut, to the Devons:

"We purchased our Devon stock of Messrs. Patterson and Caton, of Baltimore, in the autumn of 1819-20; since which time we have kept no other stock of cattle on our farms; and we have found them to answer our expectations fully in all respects. The cows are generally good for milk, and with a judicious selection, the best we have ever seen. We have as fine milkers as we have seen any where; and we live in a region *exclusively dairy*. For working oxen they certainly surpass all other breeds we have ever known; and for beef they are far superior. They are small boned, and close built, and outweigh the estimate of every one, and the quality of the beef is superior to any. They possess the agility of the horse for ordinary labor, and are yet remarkably docile. They are exceedingly hardy, and will thrive when other cattle would starve; and we have no doubt will produce more beef from a given quantity of feed than any other breed. The Devons appear rather small in size, but they tell well in the hands of the butcher.

"We sold a pair of Devon oxen which were raised on our farm, and worked till they were six years old, and then fattened one year and three months. They were butchered in New York in March, 1831. The quarters only of the two oxen weighed 2966 lbs. averaging 1483 pounds each. The hides and tallow averaged about 250 pounds per ox. They were said by all to be the best beef ever butchered in that market."

So here we have as positive opinion in favor of the Devons.

But further. Charles Henry Hall, Esq. of Harlem, who I esteem as good a judge of stock as any gentleman of my acquaintance, a large importer and breeder, and to whom the country is much indebted for his spirited exertions in introducing fine domestic animals to our state, has an extensive stock of Durham Shorthorns, and some Devons also. His working oxen are Devons; and he informed me when visiting him last summer, that he never saw any cattle so fine for the draught as the Devons. "For," says he, "they are universally red, with fine, long, high horns; are always brisk and active. They are therefore easily matched. They travel in the plough or cart as fast as horses, and are altogether the most beautiful oxen I ever saw." This was said while we were viewing a fine pair of 5 year old three-quarters blood Devons on the cart-tongue. He also had a pair of large Devons on his farm at Greenbush.

"But for cows," continued he, while looking at four splendid Durhams, with an imported Alderney, and a Dutch cow, just passing into the yard, "I know of nothing like the Shorthorns. They are so large and fine, so docile, and yield so much milk that I prefer them to all others. They grow quick, are early at maturity, are hardy and good feeders, and most excellent for the dairy."

The opinions of other gentlemen might be quoted in favor of either breed, and some much against them. One says:

"There have been several Shorthorned Durham

bulls kept in this region, but our farmers universally become sick of them, and they are now all out of favor. I would not have them on any account. Certainly for these reasons: One is, their color is bad.—Next, they require tender care and high feed; and lastly, they possess no purity of blood, being entirely made up of mixed breeds, and they immediately degenerate, especially by crossing with others."

Another says:

"The Devons are truly a *beautiful little* race of animals, and when you have said *that*, you have said *all*."

Some eminent agriculturists of New England, where the native breeds of cattle exist in their greatest perfection, and where the improved breeds do not generally stand so high as in the eastern and central parts of New York, prefer the "fine old Massachusetts Stock," as they term it, to any other. Their general color is mahogany red, dun, and brindle; either of which are considered good colors. The Hon. Daniel Webster, who is a most excellent judge of cattle as well as a profound statesman, is said to have a most select stock of the native breed on his farm, and to prefer them to all others. And certainly no country surpasses the counties of Old Hampshire and Worcester in Massachusetts for their dairies, working oxen and beef. The Shorthorns were early imported into Boston, and from thence scattered through the interior of New England. But as they have not generally obtained throughout that hilly region where a hardy race of cattle are required, and oxen are used for the usual labors of the farm, and the cattle have more the appearance of having descended from the Devon Stock than any other, it may fairly be presumed that they possess some radical defect which injures them in the estimation of the New England farmers. The difficulty no doubt is this. From their heavy and large built carcasses, and quiet, lazy dispositions, the males do not make good working oxen; and if they even were good for that purpose, they could hardly ever be well matched in color; and their color is almost universally either white, red and white, or spotted. A red Shorthorn is rarely seen. When found, they are held in high estimation; but the color of their stock cannot be depended on. The constant tendency of it is to red and white or pied. The following notice, extracted from the *Greenfield Mercury*, is a prominent instance of the prejudice existing against color in Massachusetts:

"Mr. Frink, of Northampton, exhibited a noble white bull at the Franklin county cattle show, which obtained only the third premium, in consequence, it is understood, of a prejudice entertained by a portion of the committee against the color. When Mr. Clay was in Northampton, he saw this bull, and offered five hundred dollars for it, if delivered in Kentucky, offering also to pay a good portion of the expenses of transportation. He said that he prided himself on the stock on his farm, but he had never yet seen any thing which would compare with this. We have heard the question asked, repeatedly, how far the committee were correct in their prejudice against the color. It is certain that some of our best imported stocks were white."

This animal was no doubt a Durham, and in Kentucky where oxen are seldom if ever used for the draught, and cattle are raised only for the purposes of milk and beef, the color would form no objection.—Mr. Clay therefore judged correctly in highly estimating the value of such an animal. Under all these circumstances it will be readily seen that these different breeds of cattle possess advantages for one region of country, and disadvantages for another; and that perhaps either kind would not be exclusively the best for the whole surface of our country. In answer to the one, who refused fifty dollars for his calf at a day old, I would observe, that if the Durham cattle were universally kept throughout the country, it would be worth intrinsically no more than any other calf in

proportion to its value for veal or for rearing. The estimation of its value therefore is for the breed, and the scarcity of the animal; and although he exults over the humbler Devon that is hardly of equal value at two years old, yet this last is double the price of the native, which can only be estimated at its intrinsic worth for beef, labor, or the dairy; and to each of them is allowed a fictitious value on account of its pedigree, blood, and scarcity, according to the fancy of the purchaser or owner.

While riding about the neighborhood of Boston during a few days last summer, I remarked the character of the numerous fine red milch cows with which the pastures and roads abounded. They were clean made, fine, straight horned animals, with large white silky udders, and sizeable, straight, taper teats, each looking as if she would yield her pail full at a milking. I inquired what breed these cows were of; and was informed that they were native animals, with perhaps a cross or not, as the case might be, of imported cattle, driven in and sold for family cows from the country. These cows produce the excellent working and beef oxen of that region, and are of the same class from which the fine butter and cheese of New England is made. The farmers who raise this class of cattle, no doubt consider them the best of any for their purposes.

I have conversed with some good breeders on the utility of crossing the Durham upon the Devon, and have been answered that it will never succeed; that the offspring partakes of the good qualities of neither, and will deteriorate rapidly. Yet the handsomest animal of the ox kind that I ever saw was a three year old red steer on the farm of C. H. Hall, Esq. at Greenbush, the offspring of a full blood Devon cow by a full bred Durham bull. The celebrated bull "Eclipse," a mahogany red, for many years owned by L. Jenkins, Esq. of Canandaigua, and whose stock is now in high repute through all the western counties of New York is half Devon and half Durham Shorthorn. The fine points of both breeds appeared in these two animals to be united. I have seen other stock also the produce of one breed upon the other equally promising.

The question may perhaps be now asked, which breed of cattle do I prefer, for after having said so much on the subject, I might be expected to express an opinion of some sort. I readily answer that my mind is not exactly made up. Still I am inclined to believe, that when cattle are to be raised solely for their milk or their beef, the Durham Shorthorns will take the lead. Their large frames, deep full bodies, and great capacity for taking on flesh; rapid growth, and early maturity, are great inducements for their being preferred by the butcher; while the fine points, distended udder, quiet disposition, and silky skin of the cows render them exceedingly valuable as milkers. They are eminently fitted for a mild climate and rich pastures, and yet are highly esteemed by many of the most wealthy and intelligent agriculturists as the best stock in our own rigorous climate. With many gentlemen of wealth and enterprise they are as highly prized as the finest blood horses, and it is considered a high compliment to own an animal whose name and pedigree appears in the "Herd Book" of England. In fact no blood cattle stands so high as the Durham Shorthorns.

It might perhaps appear invidious to mention the names of some gentlemen to the exclusion of others who have rendered great service to the country by extensive importations of this breed of cattle: yet among those who have selected with great care and expense these fine animals may be named C. H. Hall, Esq. of Harlem, Gen. Van Rensselaer, of Albany, Francis Rotch, Esq. of Butternuts, Otsego county, John Wells, Esq. of Dorchester, Mass. and John Hare Powel, Esq. of Philadelphia. These gentlemen are said to have purchased at different times some of the finest animals from the stock of Messrs. Whitaker, Lord Althorp, and Mr. Wetherel, who

confessedly stand at the head of the cattle breeders of England.

With such high authority therefore, I cannot but consider that any stock of cattle would be benefitted by a cross with the Durham.

As to the Devons, their beautiful symmetry of form, deep mahogany color, fine and short silky hair, hardy athletic figure, and vigorous, compact, and muscular frame, must make them universal favorites where cattle are wanted for laboring purposes and fine beef. My experience will not warrant the expression of opinion of their capacity for milk, but the appearance of the cows does not indicate an extraordinary tendency that way. I should judge they were fair milkers; they are long and handsome in the body and lay on flesh remarkably well. I think from their appearance, that *according to their show*, they will outweigh the Durhams, although a much less animal in size; and the native cattle of our country must be infinitely benefitted by a judicious crossing of this breed.

As the ultimate object in breeding all kinds of cattle is profit, they possess one quality of value that is rarely if ever found among the Durhams; and that is, good color. Whether it be fancy, prejudice, or whim; or whether there is an intrinsic value in red cattle over those of other colors, I know not; but the fact is nevertheless true, that clean, straight bodied, red cattle will sell ten to fifteen per cent higher in the market, and among drovers, and for working oxen, and milch cows, than those possessing equally good points, but of pied, striped or mixed colors. This is particularly the case with working oxen. A pair of well made and closely matched working cattle *will always* sell at a fair price. The Devons almost universally match well, and it is with great difficulty they imbe other colors than red, even in mixture to low grades of blood. Certainly on the score of *color* they are the most valuable cattle we have, and of course always saleable and in demand. Another valuable quality possessed by the Devons is the exceeding length, brightness, and beauty of their horns. This it may be said is a matter of no consequence; horns are useless, and but an encumbrance any way, and why should they vary the value of cattle? I can only answer that people who deal in these animals will universally pay something for appearance. No fact is better known than that handsome horses bring more than homely ones.—Yet the latter will do equally as much work. And so it is with cattle. Beauty is a quality that is always highly estimated and well paid for. Who that has any judgment or fancy among cattle would not prefer a stock of high horned stately looking oxen handsomely set off with brass or black tin tip, to a squad of bug-horned animals whose heads cannot be trained into any tolerable shape to make a respectable appearance? It is therefore for these reasons that I think among those farmers who use oxen for the draught, that the Devon stock will be most esteemed.

Having lately purchased a valuable tract of land upon which I purpose to raise cattle for the various purposes of beef, dairy, and labor, I have obtained a very fine full bred Devon bull from the stock of C. H. Hall, Esq. who is in possession of the excellent Devon stock of the late Rufus King, of Long Island, to whom they were sent by the celebrated Mr. Coke, of Norfolk, England. He is pronounced by good judges to be the handsomest animal they ever saw, and of the finest proportions, although not large. His color is deep red. I have also a full blood Durham Shorthorn, bred by Israel Monson, Esq. of Boston; a large and fine animal, whose pedigree is of the first character. He combines the blood of Denton the sire of his dam, and of Wye Comet his own sire, and is mostly a deep, rich red in color with some white. Yet three-fourths of the farmers who have visited them both, declare their preference for the Devon blood to that of the Durham. But among our great breeders the Devon would be lightly esteemed, while the Durham has found a place in the forth-coming English Herd Book, and was pronounced by the Examining Committee by

far the best animal at the last Brighton Cattle show, where he was exhibited, before leaving Boston for Buffalo.

My object in obtaining both these animals is to raise the two kinds of stock for the purposes to which I think they are best adapted, viz: the Devons for working oxen, and the Durhams for milch cows and beef; and also by judicious crossing, with our native stock, to improve the breed of cattle generally in this section of the country, no where more needed. I have also purchased a very fine Devon cow, a most excellent breeder, and a beautiful Holderness heifer. I further purpose in the ensuing spring to increase my improved stock by adding two or three first rate pure blooded young Durham cows or heifers; and then, with a good stock of well selected native cows, to make a fair start as a breeder of stock.

These are my views, expressed from what I have seen and learned of the two prominent breeds of improved cattle in most repute among our great cattle dealers. I may have been mistaken in my views or expressed opinions contrary to those entertained by the friends of either race of these valuable animals; and if my remarks shall draw correct opinions from others, I shall be happy in the knowledge that I have not written in vain. ULMUS.

HORTICULTURE.

(From the Columbia Sentinel.)

VEGETABLE LIFE—A REMARKABLE LAW.

Its influence on several operations in Horticulture and Agriculture.

It is well known that, in the animal kingdom, all those circumstances which accelerate the growth of the body, exercise a proportional influence on the productive system, so that the period of puberty is uniformly earlier in domesticated than in wild animals, and in those which are fed plentifully with food than in those which are scantily supplied.

These effects of an abundant supply of food are exhibited throughout the whole range of the animal kingdom, as far as observation has hitherto extended. The very reverse of this arrangement seems to prevail in the vegetable kingdom. Where plants are furnished with an abundant supply of food, their reproductive energies develop themselves slowly, and flowers and fruit or seeds are later in appearing. On the other hand, when the supply of nourishment is scanty—when the plant is, as it were, starved, and when death is threatened, the reproductive energies act with readiness, flowers and seeds are produced, and the extinction of the race guarded against; or, in other words, the scantier the supply of nourishment, the earlier will a plant propagate its kind.

Let us now attend to some of the exhibitions of this law, and their application to useful purposes.

In reference to seeds, it has been long known to farmers and gardeners, that those which are new or fresh produce plants with more luxuriant foliage, and less inclined to run into flower and fruit, than such as have been kept for some time, and are partially spoiled. In the first case the supply of nourishment during the early stages of its growth being in abundance, the plant enlarges rapidly in size, while in the latter case the scanty supply causes the plant, in obedience to the law which we have announced, to run more directly to flower and seed. These circumstances are carefully considered in the culture of cucumbers and melons, the seeds of which are seldom employed until several years old. Such, indeed, is the attention paid to this condition, that we find in books on horticulture, the following grave recommendation: "If new seed only can be had, it should lie a week or two in a suitable place, to dry away some of the watery parts." A similar attention to this law, in reference to the seeds of other vegetables, is productive of equal benefit. Peas, for example, are well known as apt

to run to straw, where the ground is rich or moist. The employment of old seed is the only suitable remedy.

In some newly enclosed lands, the evil of excessive luxuriance is frequently experienced to an inconvenient degree during two or three years. The straw is great in quantity, but the grain is always deficient. In vain is recourse had to early or thin sowing, while the use of old seed is neglected. We need not here guard against misconception, by stating in detail, that where seeds do not vegetate, or give origin to a weak, sickly, useless plant.

Where luxuriance of leaf and great size are the object aimed at in the cultivation of garden or farm produce, the influence we have been considering must be guarded against as an evil; especially, for example, with turnips and cabbage; old seeds producing plants too disposed to run to flower.

Independently of the influence which this law exercises on the future plant, as the result of the condition of the seed, we have it in our power to witness its operation under other circumstances, in the growing plant itself. In the management of fruit trees, there are a variety of plans pursued, which, though obviously depending on this law of the vegetable kingdom, are frequently but imperfectly understood by the practical cultivator. The transplanting of fruit trees hastens the production of flower buds. A tree which for years has shown no tendency to produce flower buds, but which has been exclusively occupied in the extension of its roots and branches, will, upon being shifted from its place, soon exhibit symptoms of a change. The roots, by this process, have been in part injured, the supply of sap to the tree during the following season has in consequence become diminished, and the plant ceasing in a great measure to extend its size, hastens to propagate its kind by the production of flower buds, and the subsequent display of blossoms and fruit.

The diminished supply of sap, and the consequent hastening of the production of fruit buds, is accomplished by several other plans equally efficacious. When a rank growing fruit tree is engrafted on a slow growing stock, or, in other words, when a tree requiring much more sap is compelled to receive its supply through a tree having but a scanty supply, the engrafted branch will come much earlier into fruit than if it had been always supplied with abundant nourishment. This method of accelerating the production of fruit, and termed dwarfing; is particularly serviceable in enabling the cultivator of new varieties to become early acquainted with their respective merits.

When fruit trees are prone to run to wood, gardeners are accustomed to lay bare a portion of their roots during winter. By this exposure many of the fibres are destroyed, and the vigor of all greatly diminished; so that the sap, during the following summer, is transmitted to the branches in less quantity, and the production of fruit buds is the consequence.

Fruit trees, luxuriant in leaves, but bad bearers, are sometimes forced into a productive state, by having portions of the bark removed with a knife, or wires twisted round the stem or branches. In this case the ascent of the sap is indirectly diminished, by the obstruction of the vessels containing the proper juices, the death of the plant, or a portion of it, is threatened, and the reproductive organs speedily exercise their functions.

In the cultivation of a farm, numerous examples are frequently occurring of the influence of this arrangement of the vegetable economy. The crops growing on the thinnest parts of the soil, where the nourishment is consequently in diminished quantity, are always the first to exhibit their flowers, and to be ready for the sickle. On ill managed farms the harvest is usually much earlier, (other things being equal,) than on those where the crops are under the influence of a better system. We have had an opportunity of witnessing the delay of harvest, upon the application

of lime, for example, in consequence of this increased supply of nourishment producing luxuriance of growth rather than early flowering.

In the management of planting trees, the indications of this law may often prove of great value. Wherever we see a tree, in a very young state, exhibiting its flowers and producing fruit, we may anticipate its early decay. The premature formation of fruit buds is the consequence of a scanty supply of nourishment, arising, it may be, from the roots having been injured, but generally from the plant being placed in an unfavorable soil.

Fir trees readily indicate their disagreement with the soil by the production of cones, while yet young, and this early fructification is the almost sure forerunner of death.

The balsam fir, for example, which thrives well on a thin dry soil, begins in a few years to produce cones, —then the bark appears covered with blisters, which, when opened, pour forth a limpid resin, and the tree, after languishing a short time, dies, when in the course of a dozen years, having attained the height of from ten to twenty feet.

In looking at those decorated villas, near a large town, which to the citizens appear so captivating, one may frequently discover the real character of the soil, by this premature flowering of the ornamental shrubbery.

Though plants differ from animals, in reference to this singular law, which we have here ventured to establish from an extensive induction of particulars, they agree, in other respects, in the influence which an abundant supply of nourishment exercises in the increase of the number and size of the progeny.

GHENT FARMER.

PRUNING TREES.

We notice that some of our neighbors have already commenced pruning their fruit and shade trees. This operation had better be omitted until the month of May or even the fore part of June, as the wounds made by cutting off limbs at that season, will sooner be covered with new wood, than those made by cutting during the winter. The pruning of fruit trees may be omitted, until after they have passed the flower, and the young fruit begins to show itself, the limbs to be cut away can then be more judiciously selected with regard to the crop. Ornamental trees may be trimmed as soon as they begin to leaf out.—In cutting off limbs, a small cut should always be made the lower side first, then the limb may be cut or sawed upon the upper side without danger of splitting down when nearly off, which often happens when this precaution is not taken.—*Goodsell's Gen. Far.*

CUTTING TIMBER.

In reply to the inquiry, made by D. R. respecting the proper season for cutting timber, we say, that where durability is the object, timber should be cut at that season, when there is the least sap in it, say in February, but where it is for the purpose of clearing land, and the timber to be cut is of a kind that is likely to sprout, then it is desirable to have it cut when there is most sap in it, as that not only prevents the stumps from sprouting but they rot much sooner than when cut in February.—*lb.*

CUTTING SCIONS.

There is a prejudice against cutting scions, at any other time than during the month of February, which often deters people from improving opportunities which they have of procuring choice fruit, if they were apprized that scions might be cut at any time, from September until May, and succeed well if they are properly kept. When scions are cut early in the season, they may be put in the garden, or some convenient place, burying one end of them in the ground, or they may be laid in a hole in the ground, covering the whole with earth, where they may be allowed to remain until spring.—*lb.*

RURAL ECONOMY.

(From the New England Farmer.)

FARMER'S WORK.

On the feeding and management of Milk Cows.—

It is of great consequence in the management of a dairy that the cows should be treated with gentleness, so that they may not be afraid of being milked, nor dislike the milker. A cow will not yield her milk willingly to a person she fears, hates, or apprehends ill treatment from. Young cows, in particular, may have their characters for gentleness, and good milkers formed by the manner in which they are treated.—This truth, of much importance to all concerned in a dairy or its products, is well established and illustrated by a communication from Mr. Russel Woodward, published in *Memoirs of the New York Board of Agriculture*, in substance as follows:

Having formerly kept a large number of cows, I observed many amongst them that dried up their milk so early in the fall, that they were not profitable, while others with the same keeping, gave milk in plenty, until late in the season. I likewise have often heard my neighbors observe, that some of their cows, though very good in the forepart of the season, dried up their milk so early that they were unprofitable, and they should have to put them off; I accordingly found it expedient to find out the cause if possible; and when I brought to mind the ways that some of my young cows had been kept and milked, I attributed the cause to the milking of them the first season they gave milk; and by many experiments since, I have found that young cows, the first year they gave milk, may be made, with careful milking and good keeping, to give milk almost any length of time required, say from the first of May to the first of February following, and will give milk late always after, with careful milking. But if they are left to dry up of their milk early in the fall, they will be sure to dry up of their milk each succeeding year, if they have a calf near the same season of the year; and nothing but extraordinary keeping will prevent it, and that but a short time. I have had them dried up of their milk in August, and could not by any means make them give milk much past that time in any succeeding year. I had two heifers, which had calves in April, and after getting them gentle, I set a boy to milk them for the season, (which is often done the first season on account of their having small teats;) he was careless, and dried them both up in August.—Although I was satisfied I should lose the greater part of the profit of them afterwards, yet I took it upon me the following year to milk them myself and give good feed, but to no purpose. I could not make them give milk much past the time they dried the year before. I have two cows now that were milked the first year they had calves until near the time of their calving again, and have continued to give milk as late ever since, if we will milk them.

Economy of Time and Systematic Farming.—In the winter season you will do well to take breakfast by candle light. You will thus save an hour in a day at the least calculation, and in a week nearly or quite the working part of a winter's day. You may find a profitable amusement for several of these long evenings in contriving and laying out work to be done the next season. You should have a plan of your premises, or at least a list of the fields or parcels of land of which they are composed, together with notices of the soil, the preceding crops, the kind and quantity of manure, mode of culture, &c. &c. which have been bestowed on each. Then proceed to set down what is to be done in each field. Such as No. 1, Indian corn, the borders with potatoes of the Chenango sort, the corn in drills, after manuring with stable manure at the rate of — cords to an acre, spread evenly and ploughed under. No. 2, Spring

wheat, &c. No. 3, Sowed with winter wheat last fall, to be ploughed immediately after harvest, for a crop of ruta baga, &c. &c.

Treatment of Domestic Animals.—Keep up such a sort of social and friendly intercourse with the tenants of your stables, barn yards, and even your pig sty, that they may be as tame as kittens, and prick up their ears and wag their tails with joy and gratitude whenever you approach them. Animals will not thrive even on custard and apple pie if they must eat their allowance with fear and trembling, expecting every moment to be all but annihilated by their cross keeper; who we are sorry to say, is sometimes more of a brute than any quadruped under his care. Besides, if any of your stock should be sick, or lame and need doctoring, you can better handle, and give them their prescriptions, if they are accustomed to kind and familiar treatment, than if harshness and bad usage had rendered them as wild as partridges, and cross as catamounts.

Singular Modes of Fattening Cattle.—In some parts of France according to an English writer on Agriculture, they fatten cattle with maize, [Indian corn] "but in order to render it tender, they pour boiling water upon it, cover it up close, and give it to the cattle the same day, and in this way it is a most excellent fattener, both of cattle and poultry. But in order to make them fatten sooner and better, they give them, every night, and sometimes of a morning, a ball of pork grease as large as an apple: they say this is both physic and food, and makes them thrive the better.

"The fact of hog's grease being given was confirmed at Souilliac; it is given to increase the appetite, and answers so well, that the beasts perfectly devour their food after it, and their coats become smooth and shining. The most fattening food they know for a bullock is walnut oil cake. All here give salt plentifully, both to cattle and sheep, being but 1d per pound. But this practice is, more or less, universal through the whole kingdom.

"In Flanders, from Valenciennes to Orchies, for fattening beasts, and for cows, they dissolve linseed cake in hot water, and the animal drinks, not eats it, having various other food given at the same time, as hay, bran, &c.; for there is no point they adhere to more than always to give a variety of food to a fattening beast."

Young Cattle.—Young's Farmer's Calendar, under January, contains the following observations: "Last year's calves should now be fed with hay and roots, either turnips, carrots, or potatoes; and they should be thoroughly well fed, and kept perfectly clean by means of litter: at this age it is a matter of great consequence to keep such young cattle as well as possible, for the contrary practice will inevitably stop their growth, which cannot be recovered by the best summer food. If hay is not to be had, good straw must be substituted; but then the roots should be given in greater plenty, and with more attention. To steers and heifers two years old, the proper food is hay, if cheap; or straw, with lots of turnips, cabbages, &c. It is not right to keep yearling calves, and two year olds together; because in general, the younger cattle are, the better they should be fed."

Sucking Calves.—Although the following article was published in the N. E. Farmer, vol. viii. page 76; we republish it for the benefit of those of our subscribers who may not be in possession of that volume, or may have forgotten or overlooked the information which the communication contains.

A very intelligent and practical farmer states that he considers nothing more conducive to the thriving of sucking calves than to keep in their pens an ample supply of dry yellow loam, of which they are at liberty to eat as freely as they choose. They will use it eagerly, and he regards it as of more value to them than Indian meal. There is no better evidence of its

utility than the fact that no man's calves find a readier sale or bring a higher price in our market than his.—The philosophy of it we do not pretend to explain.

S. N.

IMPORTANCE OF STRAW IN HUSBANDRY.

Rules for feeding Horses with Straw.

In regard to horses, they seldom get any hay for three months in winter: but with straw and the corn which must always be given them, whether they get straw or hay, they not only plough three-fourths of an English acre per day, or work from seven to eight hours at other labor, but are actually full of flesh and vigor when sowing commences. They must, however, have hay instead of straw, when the severe labor of spring takes place.

When, therefore, farmer's horses are so much reduced in condition as to be unable to go through the severe labor of spring, it is owing to their not having got a sufficient quantity of corn. Peas and bean-straw certainly make the best fodder, when not injured by rain; but if that kind of straw is damaged in harvest, white straw is to be preferred.

Rules for feeding Sheep with Straw.

There is no food of which sheep are fonder than peas-straw. The soil of the pastoral districts in Scotland, being rarely of a kind calculated for peas, any extensive cultivation of that grain is impracticable; but when circumstances are favorable to that crop, peas ought to be cultivated, were it merely for the straw, as it would enable the store-farmers to carry on their system of sheep-farming with much more advantage. Indeed, the same plan might be advisable in other districts. It might be proper to add, that for ewes at yearning time, lentil-hay is better than tare-hay or even peas-haulm.—N. E. Farmer.

NUTRITIVE MATTER.

The following is taken from Sir H. Davy's Table of Nutritive Matter afforded by different vegetables, and may be found useful to farmers, in making calculations as to the worth of different crops, for feeding stock, &c. Indian corn, not being the produce of the Island of Great Britain, was not analyzed by him, but we give the results from other chemists:

1000 parts each gave the following:—

Winter Wheat,	955	Rye,	792
Spring Wheat,	940	Barley meal,	920
Indian Corn,	800	Oat meal,	670
Potatoes,	250	Turnips	42

Now if we make a table from the above calculations, giving to each the produce of an acre (as near as may be) we shall see at once the relative value of each compared with the other, as contributing to the support of animal life:

	lbs.	lbs. nutritive matter.
Potatoes,	12,500	would give 3,125
Indian corn,	2,400	" 1,920
W. Wheat,	1,200	" 1,146
Rye,	900	" 722
Barley,	1,200	" 943
Oats,	960	" 552
Turnips,	7,500	" 315

Thus it appears, that one acre of Potatoes is equal to about two acres of Indian corn, three of Wheat, four of Rye or Barley, six of Oats, or ten of Turnips. Should the above table be found incorrect, we will thank any of our farming friends to forward a more accurate one, and we will give it a place in our columns.

STRANGE MODE OF CURING A VICIOUS HORSE.

I have seen vicious horses in Egypt cured of the habit of biting, by presenting to them, while in the act of doing so, a leg of mutton just taken from the fire; the pain the horse feels in biting through the hot meat, causes it after a few lessons, to abandon the vicious habit.—Burckhardt.

Prices Current in New York, January 4.

Beeswax, yellow, 21 a.— Cotton, New Orleans, .12 a 13½; Upland, .10 a .12; Alabama, .12 a .13½. Cotton Bagging, Hemp, yd. 20 a .22; Flax, .18 a .19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, 15.00 a —; rough, 14.00 a 14.25; Flour, N. York, bbl. 5.37 a —; Canal, 5.56 a 5.75; Balt. Howardst. 6.25 a —; Rh'd city mills, 6.75 a —; country, 5.75 a —; Alexand'a, 5.75 a —; Fredericksburg, — a —; Petersburg, — a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.52 a 3.75, per hhd. 16.50 a — Grain, Wheat, North, — a —; Vir. 1.12 a —; Rye, North, .75 a 80; Corn, Yel. North, .70 a .74. Barley, .65 a 67; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Provisions, Beef, mess, 8.62 a 9.50; prime, 5.62 a 6.00; cargo, 5.50 a 5.75; Pork, mess, bbl. 14.50 a 15.25 prime, 10.75 a 11.25; Lard, 10 a —.

BOLTON FARM, NEAR BRISTOL, PENN.

To be Rented.

That part of Bolton farm which is in the occupation of the present tenant, containing one hundred and twenty acres of land, more or less, including the tenant's house, one of the best barns in Pennsylvania, an orchard of five hundred apple trees of the best fruit, cider press, mill, &c. &c. will be rented to a tenant who can be well recommended as a suitable person to provide and keep on the farm, only the best selection of every description of stock, and who is capable of managing a first rate grain and dairy farm. The object of the proprietor is, to introduce into his neighborhood the practice of raising exclusively, the best of every description of stock, for which purpose Bolton farm is well adapted by the proper proportions of meadow and upland, its conveniences for summer and winter, and its position for facility of transportation by the Delaware canal, and Bristol and Philadelphia Rail-road. For further particulars apply to the subscriber on the premises. JAMES P. MORRIS.

Dec. 20, 1833.

36.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

I. I. HITCHCOCK,

American Farmer Establishment.

CLOVERSEED—AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price for it. Address

I. I. HITCHCOCK,

Amer. Farmer Establishment.

DURHAM BULL CALF.

I have the selling of a thoroughbred Durham Short-horn bull calf, four or five months old, a very fine animal, for \$100.

I. I. HITCHCOCK,

American Farmer Establishment.

JACK.

I have for sale a young Jack, three years old, and of course without an established character as a foal getter, but he will be sold very low, say \$100, for no other reason than that the owner has no use for him.

I. I. HITCHCOCK,

American Farmer Establishment.

A good Jenny is wanted by the owner of this Jack.

DURHAM SHORTHORN BULLS.

I have the selling of a very superior Durham Short-horn bull, two years old. Price \$250—and of another, four years old, a first rate animal in every respect.—Price \$350. Address

I. I. HITCHCOCK.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the best season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

NEW CHINESE MULBERRY.

(Morus Multicaulis.)

I have concluded to reduce the price of this tree, to 50 cents per plant, or \$5 per dozen. The public ought to be aware of the very important difference between trees of this variety on their own roots, and those engrafted on White Mulberry stocks, one of the former, being worth a dozen of the latter.

Those I offer, are not only rooted plants, but of very fine size and shape.

I. I. HITCHCOCK.

YOUNG HECTOR.

For sale, the beautiful bull Young Hector, 17 months old, three-fourth Durham blood, and very promising.—Price \$100. Apply to

I. I. HITCHCOCK.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Ailanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chesnut, Madera Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them.—The season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.50.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —. Rappahannock, 3.00 a 4.90.—Kentucky, 4.50 a 8.90. The inspections of the week comprise 299 hhds. Maryland; and 63 hhds. Ohio—total 362 hhds.

FLOUR.—Best white wheat family, 6.75 a 7.25; 2d. quality, 6.25 a 6.75; super Howard street, 5 12½ a —; (wagon price, 5.00 a —); city mills, 5.25 a —; city mills, extra, 5.62½ a — CORN MEAL, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—GRAIN, red wheat, 90 a 1.00; white do 1 15 a 1.20.—CORN, yellow, 55 a 56; white, 54 a 55; in the ear, — a — per bbl.; RYE, 65 a 66; chop rye, per 100 lbs. 1.50 a — OATS, 35 a 36.—BEANS, 1.50 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—CLOVERSEED, 4.75 a 5.25; TIMOTHY, 2 50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2 50 a —; Herd's, 1.25 a —; Lucerne 37½ a — lb.—BARLEY, — a —.—FLAXSEED, 1.62½ a 1.70.—COTTON, Va. 12 a 13; Lou. 14 a 15; Alab. 1½ a 14; Tenn. 12 a 13; Upland 12½ a 13.—WHISKEY, hhds. 1st p. 25 a —; in bbls. 24 a 24½.—WOOL, Washed, Prime or Saxony Fleeced, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleeced, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 185; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 37½ a —; Plaster Paris, per ton, 3.75 a —; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 6.00 a 7.00.—Oak wood, 4 50 a —; Hickory, 6.00 a —; Pine, 3.50 a —.

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Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JAN. 17, 1834.

CULTURE OF SILK IN THE WEST.—The following letter speaks encouragingly of the progress of the culture of silk in the western states, and of the nature of the art, so far as the experience of the writer enables him to form an opinion. That the business is practicable and profitable, we have had sufficient evidence; and that it will ultimately become one of our great objects of national industry, we have no doubt. But we must not lose sight of the important fact inculcated in the old adage—"practice makes perfect." Hence we must not expect to be able to produce the finer fabrics at first; nor must individual producers of cocoons expect to be able to produce these fabrics at any time. They can only be expected from the looms and machinery where capital skill and varied experience shall have been concentrated. What family loom ever yet turned out the finer qualities of linen and cotton? And yet every body admits the simplicity of the process of producing the more common qualities of those fabrics. It should therefore be the aim of those who enter upon the culture of silk, to produce the coarser kinds first—sewing silk, stockings, &c., as these will pay expenses while they are acquiring experience and knowledge in the business. To the questions of our correspondent, we reply, that what is called *coach-lace flos* is the kind of unmanufactured silk most in demand in Baltimore. It is a twenty fibre thread very partially twisted, with the gum extracted. Of course it is not raw silk. If well reeled, it is worth eight to ten dollars a pound; though at this time we know of no one who wants to purchase. For sewing silk, fifty fibres may be reeled together; but a more even thread will always be obtained by reeling twenty fibres, and doubling the produce till the size of the thread desired be obtained. We will take charge of the silk to be sent next year by our correspondent with pleasure, and use our best exertions to obtain a fair market for it; and the more readily so, because it will furnish an opportunity for giving valuable information to our readers at large, as well as to our correspondent.

MR. HITCHCOCK: *Champaign Co. O., Jan. 1, 1834.*

Yours of the 5th inst. was duly received, and you have my thanks for your kind attention. In answer to your request, I return you a brief account of my career in the silk raising business. I commenced the business in the spring of 1830. Not having any practical knowledge of it, I depended solely upon such books as I could command for my direction; until this time I had not seen a silkworm. My first essay was instituted for no other purpose than as a mean of acquiring such experience as I deemed indispensable, to enter upon the business with a view to profit. Being as yet unprovided with the white, I had recourse to the native mulberry, (*morus rubra*). I, however, procured some of the seed of the white mulberry, and have now raised about a thousand young trees suitable to set out. When from these I can have a supply of leaves, I contemplate going into the business upon a more extensive scale. I have thought of hedging in my farm with white mulberry, for the two-fold purpose of a lasting inclosure and an abundant supply of the leaves for silkworms. I have raised three crops of silk, and found no difficulty to attend it which I was not equal to.—Any person of common observation could, with very slight experience, get along with it well, I should suppose. My family find it an easy matter to reel and manufacture it into sewing silk; but it does not command a fair price—probably because we are unable to give it the colors most in demand.

If Cincinnati afforded a market for cocoons, farmers here would engage in the business with avidity.

Can you inform me what kind of raw silk commands the best price in the Baltimore market?—what the present price is, and what number of cocoon fibres should be reeled together for the different kinds of silk manufacture?

I expect to be able to send a small quantity to the Baltimore market next year. Will you, sir, be so good as to take charge of it, have it inspected, and send me the result?

Very respectfully, yours, &c.

SENECA LAPHAM.

MR. HITCHCOCK: *Lagrange, Tenn. Dec. 20, 1833.*

In a late number of the *American Farmer*,* there is a publication in relation to a crop of cotton said to have been produced in this vicinity, purporting to be an extract from other prints.

It is a subject of no little astonishment how so palpable a hoax should have gained such currency. Any southern planter will assure you that it is a ridiculous absurdity, and carries on its face too strong an impress of idle vaporism to deceive even the most credulous of Parson Hullah's neighbors, (who, by the by, denies any instrumentality in giving it publicity, as I am informed.)

The most judicious application of labor in west Tennessee, insures us, one season with another, not more than two hundred dollars per hand; and even this product is by no means common.

This communication is made with no view of disparagement to my neighbor; but simply to undeceive thousands who restlessly wander from one extremity of the union to the other, in pursuit of a country where they can live without industry, and grow rich without exertions.

Respectfully, yours,

A FAYETTE MAN.

KEEPING A DAYBOOK.—Both merchants and mechanics are greatly indebted to their books of accounts, for information and success in the several branches of their business by regular and correct entries. The transactions of every day should be correctly noted. The time when you plough, sow, plant, mow, pull flax, cut fuel, gather corn, potatoes, &c. and the quantity and quality of manure laid on each field, should be carefully noted.

You will then know the season when labor must be done the next year, in those fields, and the kinds and proportions of manure required to dress them. Farmers should weigh all their pork, beef, butter and cheese; and measure all their grain, corn, potatoes, &c. and indeed, every article they lay up for winter; and also the time when they kill their creatures and the food on which they were fattened. This will show the quantity they consume, what, and how much they may have to dispose of. Days on which they hire laborers; the labor performed on those days, and the price paid for that labor, should be entered. This will show what time and labor must be performed the next year, the price of it, and the money which may be wanted to carry on the business of the farm. Every farmer should mark the day on which his cows, mares, &c. associate with the male of the several kinds; he will then be able to provide proper room, &c. for the reception of their young and to attend to their keeping in due season, and which ought to be a little better than common, at those periods. For want of this attention multitudes of calves, lambs, pigs, &c. are annually lost. The ages of lambs, calves, colts, &c. should be carefully noted, and the weight of them when killed; as this will point out those ewes, cows, &c. which are best for breeders; which is a very material branch of knowledge, in regard to the growth and value of a stock of cattle. In short, the farmer should note the business of every day, how and where he passed it, and what the weather was; and he should not forget, that so much of the goodness of the crops depends upon early and

seasonable cultivation, that he had better give any price for labor than be belated; more depends on this than farmers in general seem to be sensible of. Flax sowed early, will have a better coat, and more seed than when sowed late. Barley sowed early will not be liable to blast and mildew; and Indian corn planted and hoed in good season, will not be so liable to suffer from drought, and from frosts, and will be fuller and heavier, than when planted late, poorly ploughed, and indifferently hoed. Grass land on which manure is spread early will yield a much better crop, than if spread late, and one load of grass, cut when ripe, and before it withers and turns white in the field, will be of more value than two loads of the same kind, cut after it is ripe, dried away and weather-beaten; it has lost its juices in this state, which is all that is valuable. Our summers are so short, that every possible advantage should be taken for early cultivation; for negligence and inattention in the spring, will certainly be followed by cold and hunger the following winter.

But to return. A farmer should keep a careful entry of all the fodder, the quantity and quality of each kind; for he may wish to winter a cow or two extraordinary—and an account of the manure made by his swine, by scraping of the roads, his yards, by mud, barn dung, &c. for this will show him at once how much land to break up, and the strength he will have for the next year's cultivation; if he neglects this branch of good husbandry; he cannot expect to form a just estimate, either of the labor or profits of the next year. To avail himself of the advantages which stand connected with his situation and farm, he must attend to these things, many of which may appear of little or of no consequence in the eyes of the mass of farmers; but they certainly deserve their very serious attention. Laborers, unless upon some urgent occasions should never be hired by the month, nor even for a single day, in the winter season; when the days are short, cold and stormy, and when an industrious man can hardly earn his living. The quantity of pork, beef, cider, and other provisions expended, in other words, almost thrown away, by this imprudent practice, will certainly be misused, and severely felt in the following spring and summer, unless an additional stock of each be laid up to support it in the fall preceding. The farmer may hire labor in the spring, to get a good crop in due season; in the summer, to secure his grass, and in the fall of the year, to gather in his harvest, but not in the winter, when nothing can be raised, either for the use of man or beast.

And I here observe, that every farmer should endeavor to cultivate and take care of his own lands; and not let the profits of them depend on hirelings, more than he cannot possibly avoid. And he should never work within doors, while any thing can be done to advantage without; nor set himself or his laborers to that work in fair, which can be done in foul weather.—*New England Farmer.*

(From Goodsell's *Genesee Farmer*.)

BLACK TONGUE IN HORSES.

Preventive. Take one ounce of assafetida, divide it into two parts, wrap them in clean linen rags, and nail one part in the bottom of the manger where the horse is fed, the other in the bottom of the bucket in which it is watered. These will last for three months. A small piece confined to the bridle bit when the horse goes from home will act as a preventive.

Cure when the disease has commenced. Take one pint of castor oil, two ounces balsam copaiwa, two ounces sweet spirits of nitre, let these ingredients be well mixed in a bottle and given.

Symptoms of the disease, are soreness in the mouth, tongue red, raw in spots, slaverings.

All, but especially the covetous, think their condition the hardest.

AGRICULTURE.

(From the Easton Gazette.)

ON MANURES.

A paper read by a member before the Agricultural Board for the Eastern Shore of Maryland upon the subject of Manures—and ordered to be presented for publication.

Resources of manures formed by nature are all-important to the farmer, and these should be diligently searched for, and their contents daily distributed over the arable lands.

1. Marsh mud, low bottom lands, and deposits of fossil shells, commonly called shell marl, are my only natural sources of manure. I prefer this marl in the first instance, because it contains lime which furnishes the earth with an essential ingredient to enable it to produce well, and aids the action of all other manures that may be applied afterwards. Some of these deposits of fossil shells are much richer with lime than others—of those I have, six hundred bushels, as dug out of the bank or pit, to the acre will produce evident and salutary effects—and after a moderate dressing of the same land with any vegetable or animal matter, the same quantity of shell marl may be again applied with additional advantage. A further application of marl than this I have no experience of, and I incline to the prevalent opinion, that this is enough marl for some time.

Of salt marsh mud there is a great variety. My experience teaches me that some of it is good manure, and that some does not seem to be worth hauling—all had better be spread as early after hauling out as possible. Marsh mud should be distinguished from marsh turf. This last, according to my experience, is of little value unless it is first burned or deposited in a feeding yard or cowpen—but it is said that others have witnessed different and better results from marsh turf. I am told that this turf dug up and immediately thrown into bulk mixed with lime in warm weather, becomes decomposed in the course of the season and is then excellent manure—I am now making this experiment.

Low, rich bottom land is known to all as good fertilizing matter; a great deal of it is the deposit of rich soil washed down by torrents; other of it again is gradually reclaimed morass enriched with various annual accumulations of vegetable matter. There is sometimes to be found a gravelly, poor morass, on which vegetation seems principally to be supported by moisture alone. Such low bottom is neither worth reclaiming nor hauling out. There are some things, such as cranberries and some medicinal plants that are adapted to such soils, and for such alone are they fit.

Of common salt marsh mud I have put from eighty to one hundred single horse cart loads—it is heavy and the loads not large.

The mode of using marl, salt marsh mud, and bottom land is pretty much the same. All are better for exposure, and all are generally spread over the ground at all times before ploughing it, but the earlier the better. Some of the salt marsh mud has been found too acid, and has totally destroyed all vegetation for a time where it was spread—this is probably owing to excess of salt, and the land afterwards recovers.

Of fresh water marsh I have no knowledge, but presume it is similar in its effects to, and ought to be applied as, the fertilizing matter from low bottom lands, and in the same quantity.

2d and 3d. The means of making manure may vary on different farms, but, generally, they are the same. There can be no doubt that they are abundant enough on every farm to furnish daily useful employment throughout the year. As the second interrogatory before the Board relates to the means of making manures, and the third to the system of applying them, my view shall embrace both.

The first means of making manure is littering the

farm yard well, where your cattle are to be fed before you begin to feed, and add fresh dry litter regularly whenever the yard becomes wet. The quantity and quality of this manure (always esteemed very good) depend upon the care taken of the cattle. Whoever designs to increase his manure and take good care of his cattle, will litter well and commence feeding as early in the autumn as the cattle can be induced to feed, giving moderate quantities of food at first—and he will continue littering and feeding always to the first of May, and as long afterwards as he can find provender and get his stock to eat it. It is an evidence of ignorance, inattention, or want of judgment, when a farmer tells you he can't begin to feed early, lest his provender should not hold out; or, that he had not provender to feed in the spring as long as the cattle would eat it—for every farmer ought to know how many cattle he has, and what is necessary to feed them well, and he should provide it. If the seasons forbid this, he should sell off a portion of his fat stock early in autumn and reduce them to the number that he can feed properly.

Proper attention to bedding horses and cleaning stables, affords the finest source of the strongest manure produced by horses well taken care of; and the milch cows for winter's use, and work oxen, which ought all to be treated in the same way, add much to the bulk of manure.

In summer, soiling horses, milch cows, oxen, (and if it can be extended to the out cattle so much the better) furnishes much rich manure when they can be well littered, and has been satisfactorily proved to be the most economical way of feeding the grass upon a given quantity of land. Soiling hogs too in a littered pen produces much and good manure.

In fattening hogs, as is the custom in our country, in a good sized pen, a vast deal of fine manure may be made in these pens during that period by hauling marsh turf and litter of all sorts into them, before you commence feeding, and then feeding on that—the whole becomes a mass of rich matter in the course of fattening the hogs and is in fine state, the next spring, for every purpose to which manure is applied.

In some retired spot, close at hand to the kitchen and poultry yard, a common square pen should be made, say sixteen feet square; to receive the sweepings of the yard and grounds about the house, which are to be kept clean for decency and health—to receive the sweepings from the poultry, house and yard—the filth taken from all out houses—the cast off contents of all tubs, pots, ley hoppers and vessels of every sort, meat liquor and soap suds excepted, at the times when the first is boiled up with food for pigs, and the last is particularly applied to grape vines and fruit trees, for both of which it is eminently useful. The manure collected in this receptacle is the richest of all made on the farm, and where due attention is paid to it, the quantity is incalculably great.

Whatever may be the natural sources of manure with which a farm abounds, the mode of making it in fold yards, feeding pens, reservoirs, &c. ought never to be neglected. As ample stores of manure are essential to abundant production, and as that made from the stock is among the best produced, the labor and arrangements of the farm should be so adjusted as to afford a sufficiency of labor for hauling out constantly from the natural resources, as well as for making and hauling out the manure from stock yards, stable and reservoirs. The cultivation of the earth without regularly manuring it is a misapplication of time and labor—it impoverishes man and reduces the soil instead of enriching the one and improving the other.

As to the mode of applying manure which seems to be the object of inquiry in the 3d and 18th interrogatory, much difference of opinion exists among different farmers. All agree that manure, however applied, is ultimately useful—but as the inquiry seems to be into the application of manure to do the most good to the growing crop, this is the precise point upon which a diversity of opinion exists.

Men of wealth can by the force of money accomplish any thing on a farm that is practicable—they can buy land at high prices and expend enormous sums of money in buying manures and in other improvements and embellishments. However good and creditable this may be to the fortunate proprietor, it adds but little to the welfare and instruction of the great agricultural community, because few can follow such examples. To render true benefit to agriculture, plans ought to be such that the great majority of farmers may be able to adopt them—such as are within the means of ordinary tenants and farmers upon a small scale, whose whole and sole dependence is upon their farms. Whosoever will teach these men to live in comfort and to grow richer by improving their lands and increasing their crops annually will be really a benefactor.

Manure is the great agent for the increase of crops—we desire to know how we shall employ this agent to afford us the greatest yearly income. A good direction is furnished us in the maxim of a very useful agriculturist of our own time and country in this particular, which is “to extend a given quantity of manure over as great a portion of the field cultivated as possible, so as to cause the field to yield an improved quantity of crop, the ground being left better after the crop than it was before”—such a course systematically and unremittingly pursued, will, no doubt, accomplish the object of improving crops and lands.—But this direction applies more particularly to the quantity of manure per acre—the question *how* and *when* it is best to apply manure, whether superficially, or to have it immediately turned under—whether late or early, still recurs—and we are also to inquire whether perfectly decomposed manure is best, or at what lesser stage of decomposition it is more advantageous to apply it.

Many farmers have thought that the sooner the manure is incorporated with the earth in the fields after it is hauled out, the more enriched the ground becomes, and consequently the more capable of bearing a crop—supposing that all exposure to sun and air caused an exhalation of its fertilizing particles.

Others on the contrary contend, that the volatile particles of manure are comparatively very small and that such loss is unworthy of regard—that the enriching qualities of manure are rather disposed to gravitate and sink, and therefore they prefer their most superficial application.

To discuss this question philosophically is not my design. I prefer to leave that to others of more science and more leisure. I shall only offer my own experience as ascertained by my own fallible judgment and add a few suggestions.

When manures are designed to be incorporated with the earth by turning them in immediately, soil and season will produce a difference. Soil of loose texture not sandy, but sufficiently adhesive to retain what is mixed with it, manured in moist seasons, will sooner possess itself of the qualities of the manure than close, adhesive, stubborn soils will if manured in dry seasons. The loose textured soil will permit the qualities of the manure most easily to pervade it, as it is easier to penetrate a soft than a hard body, and the moist condition of the earth will afford attractions on all sides of every particle of the manure to aid in its diffusion—the soil then that soonest possesses itself of the qualities of the manure will be soonest ready to impart it.

By spreading and ploughing in your manure as you cart it out into the field, you certainly guard against the loss of evaporation, be it little or much—and having your manure thus intermixed, with your soil, the whole superficies or rather the top of your field is, for a few inches, in some degree a bed of compost.—Whether the most fertilizing particles of the manure have the greatest tendency to gravitate or fly off, I do not pretend to say—but as soon as the manure is mixed up with the soil, I conclude that the earth acts as an absorbent and that all the qualities of the manure are

thus made to be diffused through and to become incorporated with the earth with which it is intermixed. Thoroughly rotted manure being most desirable, will soonest become incorporated with the earth, and will therefore be soonest ready to act—whether its action will be longest or strongest is yet to be inquired into.

Upon two different pieces of land I have for a dozen years past pursued a different course with manures composed of the same materials—taken from the farm yards and stables. On one of these which was the best land of the two, and generally of a lively, loamy soil, I have carried out the farm yard and stable manure after it had been all collected together and thrown into a heap for a twelve month, by which time it was completely decomposed. On the other piece of land, which is generally a stiff white oak clay, I have always carried out the same manures the spring next succeeding the winter that they had been accumulated—and I am decidedly of opinion that the latter piece of land has been improved the most and that the crops (particularly that of wheat) have been quite as good notwithstanding the original disparity of the lands. The size of the fields on the two pieces of land are not very unequal, and the quantity of farm yard manure made on each not differing much. On both pieces there was a free use of marl during the time.

The application of manure on the surface as used here, is to top dress grass and wheat in winter and spring—and on Indian corn after it is up and cleared. In the case of the wheat and grass it is completely a top dressing—but in the case of the corn, the manure is first exposed on the surface and is turned in the first ploughing that is given to the corn after it is put around the hill. That manure, thus applied, may produce improvement in both the crops of wheat and corn may be very probable—but whether it improves it most by this mode, or by an earlier intermixture with the earth can only be determined by the distribution of equal quantities of like manure on the same soil, in the same year, on the two different pieces of land.

I have entertained the opinion that the sun and air exhaled much of the good qualities of farm yard and stable manures, and have therefore always turned them into the ground as fast as they were carted out, and rolled the ground immediately to prevent a further escape of the volatile particles. Believing too that the decomposition of my half rotted manure had better go on and be perfectly intermixed with the soil of my field, rather than suffer it to take place in its own bulk, I prefer carting it out and ploughing it in, in that state, particularly as the whole is accomplished by once handling and once carting it. In dull, heavy, clay soils, the action of half rotted manure, in its progress to complete decomposition, seems to dispose the stiff soil to become more easily pulverized. So half rotted manure on soils dry and sandy being apt to bury any crop to which it is applied, I would use well rotted manures alone upon such lands.

The turning in of green crops for manure, such as clover, buckwheat or Indian corn, to which is now added the cow pea, is by some, considered an eligible plan of manuring. I have no knowledge of the effect of turning in more than two of these crops, viz: clover and buckwheat, and from these I have seen great good effects. On soils where plaster of Paris acts certainly and powerfully, nothing can point out the road to abundance and wealth more directly, or upon less difficult terms than the use of clover, and plaster. But all depends upon doing things right. The crop of clover shades the ground well, and loses, under any circumstances, much of the foliage from its stock on the ground—it has also a large and long tap root that mellowes the stiff earth by penetrating deeply into its bosom and imparts much vegetable substance to it when it decays. The time for turning in the clover for manure is the question. My opinion is that turning in clover as soon as it is first in blossom, as is often done, is getting but a very moderate portion of the

benefit which it might be made to yield if it was suffered to grow and mature completely on the ground. When the clover is quite brown, and the stalk instead of being juicy and full of water become ligurious, the whole growth imparts strong substantial vegetable matter to be intermixed with the earth; but in its green state, affords little else than water. Keeping clover up and preventing any stock from feeding on it—suffering the first crop to fall and the second to grow up through it, and so on in succession, is a certain mode of enriching lands rapidly and thoroughly. Generally, the quantity of seed for an acre of clover will not cost more than seventy-five cents, and the loss of the use of such land for pasture, before it is improved is very inconsiderable. To compare such loss with the gain that would accrue in the increase of crops from such lands after lying under clover for two years, would certainly be measuring a trivial loss with a great gain.

Buckwheat will also render much service in this way, by seeding it early it will mature, producing a crop according to strength of land and season, which when ripe, may be rolled down and turned in, and a second crop will immediately spring from this turning in, that may also be rolled down and turned in ready for wheat fallow that autumn. I have never known the benefit, in one year, from buckwheat thus managed, to be equal to that derived from clover kept up the summer and autumn after it is seeded and the whole of the succeeding year. Yet I have seen most advantageous results from the buckwheat in the subsequent crop of wheat.

I have no experience of the effect from green crops of Indian corn or oats turned in, but should suppose that little good result could be expected from them in consequence of their immature state. I know nothing of the cow pea, but could readily believe from what I learn of its growth, (rank and luxuriant, filled with leaves, growing large pods full of oily peas) that it would answer well if suffered to mature before it is turned under. Inquiry and experiment upon this subject would be well made by the board.

There is a very common pea or bean which grows luxuriantly with abundance of large leaves and long pods filled with peas that are exceedingly rich and oily when ripe, called the crowder that I have no doubt, if used as a fertilizer like the cow pea, would be productive of very good results, and take the liberty of suggesting to the members of the Board, among their practicable experiments, to give a trial to this growth of our own country so commonly cultivated yet so little regarded, except among the laboring people as an article of strong rich food.

Regarding manure as the great and essential principle in agriculture; without which the best skill and practice must annually suffer diminution in its returns and rewards, it is difficult to account why it is so much neglected, when the means of procuring it are so various, so easy and so ample. To ascribe it to sloth and indolence would probably be injustice. I know no more true and rational mode of accounting for it than in our error in the distribution of labor on our farms, proceeding from another error in cultivating too much land. The true measure of what ought to be cultivated is *what can be manured*—and if what can be manured is alone cultivated and rests under clover kept up, whilst all the other, or such other means of manuring as we have adverted to or practised upon the remaining fields in turn, the farm must be rapidly and substantially improved amply to repay all labor and expense thus laid out upon it.

Why do pearl-ash and water remove grease spots?

Because the pearl-ash unites chemically with the grease, forming a species of soap, which easily washes out.

Why is pipe-clay used for scouring cloth?

Because pure clay, or alumina, has great affinity for greasy substances.

(From the Farmers' Register.)

ON THE SMUT IN WHEAT.

DEAR SIR: *Rockey Grove, Abbeville District, 1833.*

So much has been written on the smut in wheat by men of science, as well as by experienced and skillful agriculturists, and such very opposite opinions are held on the subject, that it would be presumptuous in me to attempt more than merely to give a brief account of the different opinions about it, and means recommended for extirpating it. This much, perhaps, may be acceptable to some of the readers of your very useful journal, who may not have met with the productions above alluded to, or may not retain in their memories the steep recommended. Many persons believe that the smut, let it have originated how it may, is a highly contagious disease, communicable to pure wheat in a variety of ways, by putting it into a sack, or laying it on the floor, in or on which smutted wheat has been, or by threshing or winnowing machines, and in short, by such various insidious means, that it is impossible to guard against it without the aid of washes, styptics, &c., but by the use of which it may be effectually guarded against, or extirpated, some say the first year, others in two or three years. On the other hand, many deny that it is contagious, and contend, that smut is occasioned by the state of the weather; by the situation of the land; by the nature of soil; by the puncture of the grain while green by a bug; by sowing it in the dark of the moon; and by various other causes different from contagion, and that washes, steeps, &c. will not have any effect. An English writer, who appears to be an intelligent man as well as an experienced agriculturist, and who holds the former opinion, recommends any person having doubts on the subject, to take a few handfuls of perfectly clean and pure wheat, wash it well in pure water and sow a part of it in some convenient place; then to put the remainder together with a portion of the fine black dust of smut into a small bag, shake them well together, and after letting it remain in the bag a day or two to dry, sow it at a distance from the other, and the produce of the two different sowings will, he says, remove all doubt.

If it is a contagious disease, it is important that every agriculturist who grows wheat should be convinced of it, and a more simple method of ascertaining it cannot well be afforded. As far as my own experience goes, I can only say, that washing in pure water alone will not in two years remove the smut, though it appears to prevent its increase, if it does not diminish it; and that the Lawler, which I have sowed for several years without changing the seed, in the dark as well as light of the moon, in the different situations and soils, and which has, during its growth, experienced every variety of weather, has not the smut—the Lawler was free from it when I got it; the other, which was the Haley, was not. From all that I have read, heard, and observed, I cannot but believe the smut to be contagious, and that it can be lessened, if not extirpated, by washing the wheat well, and steeping it in some one of the solutions recommended, and shall in future act upon this opinion; though I readily admit that it may commence in some other way. There are many kinds of steeps recommended, amongst which, solutions of nitric and sulphuric acid are said to be very efficacious, but as these would be destructive to the seed in unskilful hands, I shall take no further notice of them. The preparation of arsenic may also be effectual, but its use for this purpose has occasioned no little mischief. The undermentioned steeps are perfectly harmless, and said to be efficacious, and the materials of some of them in the possession of the farmer. Before any of them are used, however, the wheat should be well washed, and in washing, the refuse and light grains should be skimmed off, the wheat well rubbed and the water changed until that which is poured off the wheat is as pure as it was when poured on; or it may be placed into close wicker or hamper baskets, immersed into running wa-

ter, well stirred, shook, and the refuse skimmed off; for though the washing alone will not remove the smut altogether, yet it is a great auxiliary. After the wheat is well washed; put it into a barrel or tub, and pour on it, until it is covered, any one of the following steepings or preparations.

1. Make a pickle or brine of salt and water strong enough to float a new laid egg; in which the wheat should remain at least twelve hours. The pickle when drained off with an addition of a little more salt will answer to steep more wheat in. The wheat when taken out should be spread on a floor to dry, and well sifted over and mixed up whilst yet wet with hot slaked lime sufficient to separate the grains. One gallon of unslaked lime is sufficient for one bushel of wheat. It spread thin on the floor and occasionally turned, the wheat will not injure if not sown in a fortnight.

2. Immerse the wheat into, or sprinkle it over with, stale chamber ley, and then sift over it lime. This though cheaper, is not as advisable as No. 1, because as there is considerable danger of the seed being injured by the strength of the chamber ley, the operation is frequently not sufficiently performed; the wheat must also be immediately sowed, for if kept out of the ground for a time, its vegetating power will be destroyed.

3. Immerse the wheat in lime water from twelve to twenty-four hours.

4. Immerse in ley, made of wood ashes, from twelve to twenty-four hours.

5. Make some ley, such as is used for linen in a tub, putting four pounds of water to one pound of ashes. To the ley from one hundred pounds ashes, and four hundred pounds water, add fifteen pounds lime, which will prepare sixteen bushels of wheat. Heat the ley as hot as you can bear your hand in it, put the wheat into a basket and plunge it into the ley, stir it with a stick, drain off the ley from the wheat into the tub, and spread it on a floor to dry.

6. Dissolve five pounds of blue vitriol in hot water, as much cold water as may be sufficient to cover three bushels of wheat. Let the wheat continue in the liquid five or six hours, then spread it on the floor to dry. If quick lime can be afforded, take of it at the rate of one gallon unslaked lime to one bushel of wheat, slaken the lime by pouring water on it, and whilst warm sift it over the wheat before it gets dry, and turn the wheat over well so as to mix equally the lime. Lime, though highly advantageous, is not indispensably necessary. After nine bushels have been steeped, then add to the liquid one pound blue vitriol for every three bushels, until thirty bushels have been steeped, when the liquid is unfit for further use.

I am informed that a preparation of blue vitriol or blue stone has been used for this purpose with great and decided success in several parts of this district.

In the New England Farmer, it is said, "There is very little doubt that washing is the most effectual part of all the recipes. Salt dissolved in water is as good as any complex preparation." The value of salt as a preventative or remedy was discovered by accident in England. A ship laden with wheat happened to be sunk in the channel. Some of the wheat was got up before it was ruined and immediately sowed. The crop from this wheat was free from smut in a neighborhood where smut abounded all around. Since then, the English farmers generally steep their wheat in sea-water or salt-brine before sowing it.

Yours, THOMAS PARKER.

Effectual remedy against the ravages of the Hessian fly.—Take one quart of chamber ley, and one quart of slaked stone lime; stir them well together, and mix them with a bushel of wheat, just as you are going to sow.

This easy preventive of the ravages of that destructive insect, has repeatedly been tried by a number of farmers, who can vouch for its efficacy.

DOMESTIC ANIMALS.

(From Goodsell's Genesee Farmer.)

MR. GOODSSELL:

York, Liv. county,
December 12, 1833.

I am wishing to increase my flock of sheep, as I find they are better calculated than larger stock to be kept upon a wheat growing farm. Not having had opportunities of judging of the different qualities of different breeds of sheep, I should feel myself much obliged, if you would give me a description of the most approved breeds, together with their different qualities for wool or mutton.

The farm on which I reside is altogether upland, of what is generally termed clay soil, and my pasture lands have been mostly stocked with red clover and timothy.

As I am a reader of your paper, I should consider it a favor, if you would give this subject such explanation, as would assist me in the selection of a proper breed of sheep, or one that would be most likely to succeed, or be attended with the most profit.

A YOUNG FARMER.

[Although our correspondent has not strictly complied with our wishes, by affixing his proper signature to his communication, as we should be happy to have done in all cases, we cheerfully comply with his request, assuring him that any information which we are capable of giving, will at all times be furnished to our subscribers through the Farmer.—ED.]

SHEEP.

With sheep, as with cattle, many varieties which are known at present by different names, have been propagated, or have descended from the same parents, the difference which at present distinguishes them having arisen from the different circumstances with which they have been surrounded.

It is well known to every experienced farmer, that when a flock of sheep have been kept many years upon a farm, and that course of breeding pursued, which is termed breeding "in and in," that is, standing breeders from the same flock continually, having reference to some particular quality, according to the taste of the proprietor, that there will be what may be termed a family likeness through the whole flock. This family resemblance, may be quite different from the uniform looks, of those of a neighboring flock, which may have descended from the same source, and although the feed and atmosphere may have been similar, yet the difference of opinion with the proprietors, as to desirable qualifications, may have been sufficient to cause a difference in their flocks equal to what we see in England, in flocks known by different names, although the leading features of the sheep may be similar.

We have examined flocks called by different names in which we could perceive but little difference, or not more than could be produced in a few years by different management in breeding.

The terms Lincolnshire, and Leicestershire sheep, are often confounded, from the circumstance that they formerly meant the same sheep, but of late years, there has been an improved breed, which has been termed the new Leicester, or Dishley breed, differing considerably from the old Leicester, or Lincolnshire sheep, and hence when the term Leicestershire is applied, to make it intelligible it should be qualified by *old* or *new Leicester breeds*.

The following are the varieties of sheep now propagated in the highest estimation both in England and America, viz:

The *Spanish* or *Merino*, and the *Saxony*; the *Lincolnshire*, which may be considered as including the *old Leicester* and *Teeswater* varieties; the *Dishley*, or *new Leicester*, commonly called the *Leicester breed*, and the *Southdown sheep*.

The *Merino* and *Saxony* sheep are undoubtedly de-

scendants from the same stock, the difference being the effect of circumstances; they are both varieties propagated for the fineness of their wool.

The *Merino* sheep were first introduced from Spain into this country, by Col. Humphrey, from which flock breeders were distributed to every part of the United States.

The *Merinos* which have been propagated from the stock which was imported by Col. Humphrey are a small hardy sheep, producing on an average about three and a half pounds of fine wool, with carcasses weighing when dressed, about thirty-five pounds.—The quality of mutton is fine and well flavored.

The *Saxony sheep*, or a variety of them, was first imported into this country by the late Chancellor Livingston, one or two years before Col. Humphrey brought the *Merino* from Spain, directly from France, since that time, there has been many flocks imported from different parts of the continent, most of which although they produce finer wool than the *Merinos*, are altogether more delicate of constitution, and of course do not appear to withstand our climate as well as the *Merinos*. Both fleece and carcass are somewhat lighter than *Merinos*.

The *Lincoln, old Leicester and Teeswater sheep*.—In describing, I shall include all three under one head as varieties of the same breed. These are denominated *long-woolled* sheep. The carcasses of these sheep when dressed weigh from sixty to one hundred and twenty pounds, and produce from six to twelve pounds of wool. These sheep have cleaner white faces and legs, are broad upon their backs, and are of quiet, lazy dispositions, and are peculiar for becoming extremely fat so that it is not uncommon in England where they are fed on turnips, to see them so fat as to be unable to rise without difficulty. They are a very hardy breed, and would undoubtedly withstand our climate well.

The *Dishley* or *new Leicester breed*.—This is also a long woolled breed, with heavy carcass and a corresponding weight of wool, in this respect not varying materially from the *Lincolns*. The wool is longer but not set so thick upon the pelt as the former, having a peculiar wavy, shining appearance. They have clean heads and legs, which latter are somewhat longer than those of the *Lincolns*; they are also a docile gentle breed, and disposed to become very fat.

It is generally said in London, that the quality of the mutton from the above large long woolled sheep, is not as fine as that from some of the small short woolled breeds, which are kept in Wales; hence there is a prejudice for Welsh mutton which sells for, from fifty to one hundred per cent. more in that market, than that from the *Lincolns* and *Leicesters*. The mutton from Wales is mostly brought up to London after being butchered in Wales, and no doubt from the time required for its transportation is much improved by lying. The meat merchants of London, knowing the prejudice in favor of Welsh mutton, turn it to their advantage. The smallest and cleanest of the flocks of *Leicesters* and *Lincolns* are selected, and the quarters hang until they have acquired the look of mutton brought from a distance, when they are sold as genuine Welsh mutton to the satisfaction of both parties.

The mutton from the above breeds, forms the greatest portion of meat diet, for the laboring class of England, and is undoubtedly the most economical food with which they could be fed, as it can be raised in that country at least one half cheaper than any other kind of meat, and were the breeds more generally increased through our country, the population might be provisioned much cheaper than they are at present.

The *Southdowns*, with which may be put the *Norfolk* breed, are short woolled, not altogether unlike the smutty faced sheep seen in different parts of the United States. They are without horns, brown or smutty faces and legs, and in weight of carcass, quality and quantity of wool about the same as our com-

man sheep, over which we do not consider that they possess any material advantages. In short we consider that what we call our common sheep, are descendants from the *Herefordshire* and *Southdowns'* breed, the *Herefordshire* appears to be the same as our common sheep. They have white legs and faces, and will weigh from thirty to forty pounds when dressed, and produce annually from three to four pounds of wool.

The above description includes all the varieties of sheep, which we think will be found profitable in this section of country at present.

SHEEP, CATTLE, &c.

Questions asked by the Maryland Board of Agriculture and answers thereto by Samuel Stevens, Esq. read before said board and published in the *Easton Gazette*.

Question.—What species of sheep do you consider the most valuable to farmers generally, and what are the best modes of managing sheep and lambs?

Answer.—On this subject I possess the pride and ambition of a *farmer*, and fearless of contradiction; pronounce the *Bakewell* sheep bottomed on *Merino*, the most profitable. In the first place, the *Merino* gives a fine beautiful wool, and when crossed by the *Bakewell*, you add beauty and size, both having a predilection for fat, and an uncommon sweet flavor, and what is very remarkable and important, they are ready for the butcher at eighteen months old, and if suffered to remain two years old, they will increase in beauty, size and fat, superior to any other breed of sheep I have ever seen—and on as little food. But all farmers who expect to have fine sheep, ought to be careful every year, to select the most beautiful form and figure to breed from, both in male and female, and be sure never to suffer his ewes to go to the ram until the fall after they are twelve months old. He should keep his breeding ewes, his lambs, after they are weaned, his wethers, and his rams in separate pastures, and I consider it bad policy to put the ram to the ewes before the 20th of September or 1st of October; his lambs will then fall about the 1st of March when the grass begins to spring, and gives his lambs a fair and vigorous start; they also avoid the danger of being lost by bad weather, as no sheep should ever be confined in winter nor summer; great care should be taken to have your ewes in fine order, when they take the ram; and when they first lamb I doubt whether they should be in very fine order, as I conceive the lamb is more apt to die. I would strongly recommend to every lover of sheep to seed a field in rye about the middle of August, when he harrows down his corn, which will afford him a fine fall pasture for his wethers, or such sheep as he intends for the butcher, and a great pasture for his ewes and lambs in the month of March, and the rye will by no means be injured from producing a crop, provided they are removed by the first of April. One more important remark allow me to make; no farmer should ever keep a sheep over six years old, nor keep too many, and particular attention should be observed to remove them from field to field about every four weeks, as they become tired and wish a change,—if even you take them from a good to a bad pasture I believe they will rejoice at it and do better.

Question.—What is the best and most economical mode of keeping *Milch* cows in full milk during winter?

Answer.—On this important subject I have made but few experiments; turnips, which have been highly spoken of by English authors, I have but little faith in; the milk is thin, and I believe a cow will die on them, unless she has meal, short feed, or some other kind to aid them. I know of nothing more economical, and more calculated to produce fine milk than to have your cows well fed on clover hay and pumpkins; secured in a nice clean stable, well littered with straw, and the stall well cleaned every morning, and

at night fresh litter—and plenty of nice water. In the first place a farmer who does not raise clover, should scarcely be entitled to enjoy that good time, and pumpkins can be raised in your cornfield without the least expense or trouble (by placing two or three seeds in every fourth hill each way, when you replant your corn,) except gathering them in the fall, which can be done by little boys or girls to remove them to the turning rows, before seeding wheat—but I believe chopped rye straw mixed with meal would be very valuable feed also for horses. But to digress a little from the question, rest assured as much depends on the milk-maid, as does on the difference in food; if a cow is not milked clean, every time she will accumulate the milk left; therefore care should be taken to extract every drop, and again a cloth and fresh water should be taken to the pen or stable every morning to wash the udders.

Question.—Do you consider oxen valuable as hauling beasts?—which is the best mode of breaking them, and the best and cheapest mode of feeding them in winter, when put to severe work?

Answer.—I do consider the ox a most valuable beast for labor, and very economical. In the first place they require no feed to raise them, except grass in summer, and coarse food in winter, and the manure they return will amply pay that expense, and when well broken are so governable that a small boy can drive them with security. You may work them ten or twelve years, at hard and constant labor, at the expiration of which time you can, with two or even one summer's rest, and good pasture, with a small portion of corn, convert them into beef, or dispose of them to the butcher; you have the same advantage should they become lame or blind at an earlier period, which is not the case with horses. The capital invested is much smaller than when horses are employed, and the gear is much less expensive, and can be more easily repaired by your servants, and can draw as much manure out as a pair of horses, when the hauling is on the farm; but in my opinion should never be allowed to travel far, nor be driven out of a fast walk. I am strongly inclined to believe all oxen should be broken when one year old, by placing on them a small light yoke, and suffer your negro children or even your own children to drive them about in a common go cart with a pair of truck wheels; children will become delighted with the sport, and become useful either in collecting manure from the road side or corners of fences, &c. and deposit it in some suitable place, or bringing to the wood pile chips or bushes, &c.; should they be suffered to pass over this time, I have never encountered any difficulty in breaking them by placing a young one with an old one, yoke them, then secure their heads with a rope, and unite their tails with strings; have them gently led or driven about for one or two days, and then put to an empty cart, where they may be used perhaps a part of a day, then put them to light work, but they should be unyoked every night, as this gives them confidence—they should be gently handled, and an ear or two of corn given to them occasionally, when under yoke, and after it is removed.

The common habit and custom of farmers to give their oxen corn to work on, is in my opinion radically wrong, and a most wanton waste. Economy should be made the first study of a farmer, to learn to conduct his business with a true and steady eye to his interest in all its ramifications.

I have been constantly in the habit of using oxen for thirty-three years, and fear not a contradiction when I say I draw as constantly and work as many carts as any other person, in proportion to my number of acres, and I can with truth and sincerity say, I never used five barrels of corn or any other kind of grain during the time, with my hauling oxen. My constant habit is to have stalls provided for them with racks, where I feed them from the last of October with corn caps as long as they will last, then with some kind of coarse hay; sometimes during the winter I

change their food from corn caps to hay, and so alternately as suits my convenience and opinions. In the spring I give them my top fodder, and occasionally a few blades and clover hay; this method I pursue until the grass puts up in the spring, when I turn them out and throw to them some kind of hay, top fodder, or blades.

Through the spring and summer I cut green clover, and give to them every night. During meal spells I like to have some fine spot for them to graze on convenient to the house, or give them green cut clover, or dry clover. This practice, viz. winter feeding, I obtained when I first began to farm from a near neighbor, whom all will admit was a judicious farmer, viz. Mr. James Goldsborough, and he caught the idea from a farmer who should be held in the highest estimation for the improvement of land, and the first mover of a marl cart in this county, and perhaps in America, viz. the late Mr. John Singleton. Through the year I run from three to six carts daily, except in harvest and planting corn time, (unless prevented by sickness or some unforeseen accident.) My oxen are not fat,—is it the wish or profit of a farmer to have his oxen sleek, fat, and pumpered like a turf steed? or is it his profit to do all he can with them, and at as moderate expense as practicable? To show the *practicability* and not *theoretically*, what labor oxen can perform on the treatment I give them, I will, for your satisfaction, (and hope it will not be considered presumption,) give you an extract from my dairy, of the number of loads of manure which have been put out on my land for the last eight years, independent of hauling wood, rails, litter, cornstalks, &c. and the drawing of my farm yard manure, to the place of deposit with the view of making compost, &c. which I have never retained an account of—but I allude to actual marl, compost, marsh mud, &c. which can be denominated manure carted out on the field.

From seeding	1824,	till seeding	1825	6,291
"	"	1825,	"	1826 8,542
"	"	1826,	"	1827 6,299
"	"	1827,	"	1828 5,361
"	"	1828,	"	1829 7,122
"	"	1829,	"	1830 5,672
"	"	1830,	"	1831 3,862
"	"	1831,	"	1832 5,266

Total, 48,415

Averaging 6,052 loads each year, covering about 100 acres per annum, but I frequently put my compost on the same ground and in the same year where I marl, to give it action.

Question.—Are you of opinion that by the present mode of farming, our lands are impoverished more than they were many years ago, and if so what is the cause?

Answer.—This is a question in answering which considerable difficulty may occur,—when I take into consideration the vast majority of lands through the Eastern Shore, which are cultivated in three, and sometimes in two fields, without perhaps five acres being manured annually on each farm, and badly cultivated, I would say they are declining in value and character, and this is very much owing to land speculators who purchase up the large tracts of land cheap, and rent them from year to year at high prices, whereby the tenants have neither opportunity nor encouragement to improve, which would not be the case were the landlords to lease out said lands for a term of years, to good tenants, and enable them to improve the land. But many farmers are rapidly improving their lands, not only by manuring, the application of which is tenfold more than ten years ago, but by *judicious management, high cultivation and a regular improved system*. The spirit of improvement appears to be increasing, and an Agricultural ambition now exists, which, in my opinion, will tend to raise the character of our lands, which added to the improved

state of the health of the country, the easy access to market, the convenient and easy means of cultivation, the many and various kinds of manures to be procured, the many luxuries to be obtained from our waters, &c. &c. will in time invite strangers to settle among us, who may still add to our improvement, and prices of land—and in lieu of our youth seeking foreign climes, they will become more satisfied with "home, sweet home."

HORTICULTURE.

THE PINES.

An epicure with a fine dish of oysters or a fat beef steak, scientifically prepared for the table before him, will deem it altogether out of place, and perhaps impertinent, that you should detain him with an elaborate account of the process of eating—and explain the method by which it is to be introduced into the organ lying at the bottom of his œsophagus.* And as not less useless will a person living in the south-eastern part of North Carolina regard the remarks and statements that are to follow. I would therefore excuse myself to the inhabitant of the sand-hills for introducing them, by remarking that it is needful for the occupant of the oak-woods in the west to be informed upon the subject.

He is sadly puzzled to understand your character—is dubious about your means of subsistence, and unable to comprehend how you get money to pay your taxes. As he journeys to market, he passes mile after mile of pine forest, with scarcely a single plantation occurring, and seeing nothing but the *trees* wisely concludes that you live upon *them*. Well, he says gravely to himself, as he crawls along towards Fayetteville or Newbern, the mystery is at length revealed. It is not to be expected of one who has been fed all his days like this sand-hill brother of mine, upon tar, turpentine, pitch, and light-wood knots, and lived upon these burning sands—it is not to be expected but that he will have an inflammable constitution, and be liable to take fire on the least provocation when he comes to grow up, nor wonderful that when I happen to cross his path in the Legislature, he should burst out into a fury. I will consider of these things when we next come into collision, and take his rebukes patiently, unless he shall push me beyond all reason, when I will let him see that oak-wood, although it does not *kindle* so easily, will nevertheless make a good and substantial fire.

Now, my friend of the sand-hills, we wish to satisfy your western associate, that, without resorting to either tar or light-wood knots for food, your means of subsistence and sources of wealth are ample. You may yourself, if you please, lead him down with you to the river side, and point him to the low-grounds laden with a luxuriant growth of corn. We will only instruct him in the art of turning the pine trees to account, and if you take this patiently, we will, in return, engage in his behalf, that you shall not be laughed at when you come up the country, although you should not be very skilful in distinguishing wheat and oats from each other—though you should even be detected like the New Zealander, pulling up the wheat to see whether the tuberous root that is to be eaten is not almost formed at the bottom. This is the subject we intended to enter upon when, two or three weeks since, we took a walk and indulged in a meditation amongst the pines—though we were in some unaccountable manner led away from it, and even now, a part of it will, perhaps, have to be deferred.

Besides the white pine, which flourishes on the

high table land of Ashe county, and what has been denominated by Michaux the table mountain pine, which grows on the eastern declivities and projecting knobs of the Alleghenies, we have three species of this genus that are converted into lumber and employed in building, and esteemed as affording other products valuable in commerce and useful in the arts.

1. *The short-leaved or yellow pine* is widely disseminated through a broad belt, extending across the state from north-east to south-west, and comprehending two great geological formations—one of ancient transition slate, and the other of sandstone; though it is not confined to them, nor is it found in every part of them. The eastern part of Person, Orange, Chatham, Randolph, Montgomery and Ansan, may be mentioned as producing this tree in great abundance. It is from this quarter that the tract lying along its north-western border is supplied with materials for building; that on its south-eastern side has in general, resources of its own.

This tree is of slow growth, but yields excellent timber. Michaux remarks of it, that "in trunks fifteen or eighteen inches in diameter, there are only two inches or two and a half of sap, and still less in such as exceed this size. The heart is fine grained and moderately resinous, which renders it compact without great weight. Long experience has proved its excellence and durability." This tree no where in North Carolina approaches so near to the sea, as to render it possible for us to bring it into the foreign lumber market; so that the only demand for it must be for domestic consumption.—From the ports of Virginia, Maryland, Delaware and New Jersey, it is shipped to Great Britain and the West Indies; and immense quantities are consumed in the dock-yards of New York, Philadelphia and Baltimore.

2. *The loblolly or low ground pine.* This species is found in company with the last, and with that which is not to be noticed in damp situations where the soil is of moderate fertility. It attains a greater size than any other species inhabiting this part of the United States, rising sometimes to an elevation of more than eighty feet, whilst the stock has a diameter of two or three feet at the base. But its magnitude and the rapidity of its growth are unfortunately almost its only recommendations. The heart is commonly but a small cylinder, enveloped in an immense coating of albumen or sap, which decays rapidly when exposed to the weather. We measured one, a day or two since, in which the whole diameter was twenty-five inches, and that of the heart eight or nine. In many stocks the proportion of heart is greater, but in many it is even less. As large logs are procured without difficulty in some situations, (which of course yield wide boards, free from knots,) this species is cut and employed by the proprietors of saw-mills; but should not be used except for finishing the interior of buildings. If the whole fabric be formed of it, it may be recommended to the carpenter to have his tools in readiness for a run, when the last stroke is given to the edifice, that he be not crushed in the falling ruins. As this species often accompanies the last, growing only where there is a tendency in the soil to moisture and dampness, the two are often confounded, and the badness of the lumber it yields is attributed simply to the soil. We could state some facts in evidence that the very great superiority of the timber of the same species that has grown upon the high ridges, over that from the low grounds, is not properly understood and appreciated; but here the locality is not all: the vices of the species are additional to those induced by the soil in which it grows.

3. *The long-leaved pine.* This may safely be denominated the glory of the North Carolina forests, and held entitled (did it furnish a good subject for the graver) to the place in the arms and great seal

of this state, which the palmetto has found in that of her southern sister. It merits a fuller account than we can give of it and its productions in this number of our paper. N.

RURAL ECONOMY.

(Borrowed.)

QUALITIES OF VEGETABLE FOOD COMMONLY USED IN DIET.

Bread.—At the head of the vegetable class stands bread, that article of diet which, from general use, has received the name of the staff of life. Wheat is the grain chiefly used for the purpose in this country, and is among the most nutritive of all the farinaceous kinds, as it contains a great deal of starch. Bread is very properly eaten with animal food, to correct the disposition to putrescency, but is most expedient with such articles of diet as contains much nourishment in a small bulk, because it then serves to give the stomach a proper degree of expansion. But as it produces a slimy chyle, and disposes to costiveness, it ought not to be eaten in a large quantity. To render bread easy of digestion, it ought to be well fermented and baked, and it should never be used till it has stood twenty-four hours after being taken out of the oven, otherwise it is apt to occasion various complaints in those who have weak stomachs; such as flatulence, heart burn, watchfulness, and the like. The custom of eating better with bread, hot from the oven, is compatible only with very strong digestive powers.

Pastry, especially when hot, has all the disadvantages of hot bread and butter, and even buttered toast, though the bread be stale, is scarcely inferior in its effects on a weak stomach. Dry toast with butter, is by far the wholesomest breakfast. Brown wheaten bread, in which there is a good deal of rye, though not so nourishing as that made of fine flour, is both palatable and wholesome, but apt to become sour on weak stomachs.

Oats, barley, and rice.—Oats when deprived of the husk, and particularly barley, when properly prepared, are each of them softening, and afford wholesome and cooling nourishment. Rice likewise contains a nutritious mucilage, and is less used in Great Britain than it deserves, both on account of its wholesomeness and economical utility. The notion of its being hurtful to the sight is a vulgar error. In some constitutions it tends to induce costiveness: but this seems to be owing chiefly to flatulence, and may be corrected by the addition of some spice, as caraways, aniseed, and the like.

Potatoes, are an agreeable and wholesome food, and yield nearly as much nourishment as any of the roots used in diet. The farinaceous or mealy kind is in general the most easy of digestion, and they are much improved by being toasted or baked. They ought almost always to be eaten with meat, and never without salt. The salt should be boiled with them.

Green peas and beans, boiled in their fresh state, are both agreeable to the taste and wholesome, being neither so flatulent, nor so difficult of digestion, as in their ripe state; in which they resemble the other leguminous vegetables. French beans possess much the same qualities but yield a more watery juice, and have a greater disposition to produce flatulence. They ought to be eaten with some spice.

Salads, being eaten raw, requires good digestive powers, especially those of the cooling kind; and the addition of oil and vinegar, though qualified with mustard, hardly renders the free use of them consistent with a weak stomach.

Spinach, affords a soft lubricating aliment, but contains little nourishment. In weak stomachs it is apt to produce acidity, and frequently a looseness. To obviate these effects, it ought always to be well beaten, and but little butter mixed with it.

Asparagus, is a nourishing article in diet, and pro-

* The stomach, in the days of Dr. John Hunter, who died in 1793, and even within our own recollection.—But the word has traveled and fallen into bad company, so that instead of it the man "emuncte naris" will demand the periphrasis we have above inserted.

motes the secretion of urine; but in common with the vegetable class, disposes a little to flatulency.

Artichokes resemble asparagus in their qualities, but seem to be more nutritive, and less diuretic.

Cabbages are some of the most conspicuous plants in the garden. They do not afford much nourishment, but are an agreeable addition to animal food and not quite so flatulent as the common greens. They are likewise diuretic, and somewhat laxative. Cabbage has a stronger tendency to putrefaction than most other vegetable substances and during its putrefying state, sends forth an offensive smell, much resembling that of putrifying animal bodies. So far, however, from promoting a putrid disposition in the human body, it is on the contrary, a wholesome aliment in the true putrid scurvy.

Turnips are a nutritious article of vegetable food, but not very easy of digestion, and are flatulent. This effect is in a good measure obviated, by pressing the water out of them before they are eaten.

Carrots contain a considerable quantity of nutritious juice, but are among the flatulent of vegetable productions.

Parsnips are more nourishing and less flatulent than carrots, which they also exceed in the sweetness of their melleage. By boiling them in two different waters, they are rendered less flatulent, but their other qualities are thereby diminished in proportion.

Parsley is of a stimulating and aromatic nature, well calculated to make agreeable sauces. It is also a gentle diuretic, but preferable in all its qualities when boiled.

Celery affords a root both wholesome and fragrant, but is difficult of digestion in its raw state. It gives an agreeable taste to soups, as well as renders them diuretic.

Onions, garlic, and shallots are all of a stimulating nature, by which they assist digestion, dissolve slimy humors, and expel flatulency. They are however most suitable to persons of a cold and phlegmatic constitution.

Radishes of all kinds, particularly the horse radish, agree with the three preceding articles in powerfully dissolving slimy humors. They excite the discharge of air lodged in the intestines.

PRESERVING BUTTER.

The farmers in the parish of Udney, in the county of Aberdeen, practice the following method of curing their butter, which gives it a great superiority above that of their neighbors:—

Take two parts of the best common salt, one part of sugar, and one part of saltpetre; head them up together, and blend the whole completely; take one ounce of this composition for sixteen ounces of butter, work it well into the mass, and close it up for use.

The butter cured with this mixture appears of a rich marrowy consistence, and fine color, and never acquires a brittle hardness, nor tastes salt; Dr. Anderson says, "I have ate butter cured with the above composition, that has been kept three years, and it was as sweet as at the first." But it must be noted, that butter thus cured, requires to stand three weeks or a month, before it is begun to be used; if it be sooner opened, the salts are not sufficiently blended with it; and sometimes the coolness of the nitre will then be perceived; which totally disappears afterwards."

The above is worthy the attention of every dairy woman.

STAINS BY FRUITS

Are readily removed from clothes by wetting them, and placing them near lighted brimstone; a few matches will answer the purpose.

It is fair that he who entreats a pardon for his faults, should be ready to grant one in his turn.

As soon as age shall have strengthened your limbs and mind, you swim without a cork.

MISCELLANEOUS.

(From Goodsell's Genesee Farmer.)

REMARKS ON ELEMENTARY SUBSTANCES, AS APPLICABLE TO AGRICULTURE.

DEAR SIR:

Nieborn, August 7, 1833.

Should you think the following has any connexion with agriculture, it is at your service.

There are certain elementary substances of which both the animal, vegetable, and mineral classes are formed.

These elementary substances are oxygen, hydrogen, carbon and nitrogen, and perhaps a few others, and they are *imperishable*.

Combined in different proportions, and acted upon by the stimulants of heat, electricity, and light, they form all things here below.

The earth, and the things that are upon and about it, is a unit, and subsist upon itself. It is perpetually changing its appearances, by destroying the existing individuals, and supplying their places by a succeeding generation. Change by youth, and enjoyment, are its principal aim. Determinate laws govern the whole.

That which perishes is not the substances, but the form of the thing. Hence, death is but a change of form.

Besides the elementary substances, there is an intelligent principle which moulds them into various forms, and endows them with life.

There is but a specified quantity of these elementary substances, to which there is neither a subtraction nor an addition, and the increase of one class necessarily requires the diminution of another class.—

If the class of animals is increased, the class of vegetables and minerals must be diminished. If a species of one class is increased, there must be a consequent diminution of other species. There must be death to supply life. Life is the active, and death is the passive principle. There is a transmutation of classes and species into each other. Hence, should the farmer wish to increase his grain crop, all he has to do, is to procure dead matter, of a putrescible kind, and mix it thoroughly with the soil, and plant therein his seed, and cultivate it well, by keeping away all intruders that would assist in feasting upon his deposits. Let his seed corn have the whole benefit of the repast which he has prepared for it, and he will not be disappointed in his anticipations.

Vegetables, like animals. There is no absolute characteristic difference between plants and animals; the simplest individuals of either class being not distinguishable by our senses. Who could expect to raise a horse without giving him food? And is a vegetable not more unable to procure its food than a horse? The horse might, by the aid of his legs, get something; but the vegetable, (poor thing,) is deprived of this help, and is stationary. It can only subsist upon what it has immediately around it, and if it does not find its food there, it must die. Every farmer, therefore, should feed not only his horse, but his vegetables; or he cannot raise them. Nature, it is true, has dispersed upon the face of the earth, the elementary principles of life, but they are unequally dispersed. It is the business of him who wishes to augment production in any particular locality, to augment in that locality these principles. If he does not, he will probably have but a meagre supply of puny individuals. Nature has supplied the materials, and has left it with us to diminish or augment life, in particular places, and to control the species of production.

Look at that forest and see the elements of production. In what quantity they abound. Look upon the earth beneath those trees. See, lying there and dissipated by the winds, the materials in profusion, which may be converted into grain, grass, or flesh.—And farmer, will you not use them? Will you not

deposit them within your soil? Will you stand listless and say, "I have Abraham for my father." Go! go into the forest—gather, in the best manner that you can, those leaves—carry them into your fields and deposit them beneath your soil? Let them rot in peace, and when this is effected, and seed time arrives sow or plant your grain, and be diligent in keeping away all intruders, and your harvest will be abundant. Do you not desire plenty? Then seek it, and seek it in the only way in which it is legitimately to be found, by an honest industry, directed by a knowledge of your profession. If you have not these, then get them with all expedition, for if you do not, your wishes will be idle dreams. Nature has a spare hand for the idle and the ignorant. She likes them not, and treats them as paupers upon her bounty. Her honest, and industrious, and intelligent children are her favorites, and she rewards them generously.

Nature loves change. She is effecting it continually. This should teach cultivators to alternate their crops. The nearer we follow her in our designs, the more successful we shall be in them. Does she make mistakes? In individual instances she may produce a monster, but generally she is right, otherwise her works, ere this, must have been a wreck. Upon a great scale "there is no mistake—there can be none," and what signifies an individual blunder? It is but an exception to her general rule. Your friend,

CHelsea.

AIR PLANTS.

These attach themselves to the driest and most sapless surface, and flower as if issuing from the richest soils. "A specimen of one of these, which I thought curious," says Dr. Walsh, "I threw into my portmanteau, where it was forgotten; and some months after, in unfolding some linen, I was astonished to find a rich scarlet flower in full blow; it had not only lived, but vegetated and blossomed, though so long secluded from air, light and humidity." The barren pine is not less extraordinary. It also grows on sapless trees, and never on the ground. Its seeds are furnished, on the crown, with a long filmy fibre, like the thread of gossamer. As they ripen they are detached, and driven with the wind, having the long thread streaming behind them. When they meet with the obstruction of a withered branch, the thread is caught, and, revolving round, the seed at length comes into fixed contact with the surface, where it soon vegetates, and supplies the naked arm with a new foliage. In Brazil it grows like the common plant of pine apple, and shoots from the centre a long spike of bright scarlet blossoms. In some species, the leaves are protuberant below, and form vessels like pitchers which catch and retain the rain water, furnishing cool and refreshing draughts to the heated traveller, in heights where no water is to be found. The quantity of this fluid is sometimes very considerable, and those who have attempted to reach the flower-stem have been often drenched by upsetting the plant.—*The Vegetable World*.

Sore Tongue in Horses.—This distressing disease, we learn, prevails extensively among horses in this vicinity. We have handed us for publication the following recipe, with the assurance that it is an effectual remedy for this sore disorder; take two ounces alum, one ounce borax, half ounce blue vitriol, half ounce copperas, half pound honey, and one quart of vinegar, with a little sage—steep, and make a wash, with which cleanse the mouth of the horse three times a day, taking care to keep him from taking cold.—*Amh. Cab.*

No one is born without vices, and he is the best man who is encumbered with the least.

It is of no consequence of what parents any man is born, so that he be of merit

Prices Current in New York, January 11.

Brescax, yellow, 21 a —. Cotton, New Orleans, 11½ a 13½; Upland, 10 a 11½; Alabama, 11½ a 13. Cotton Bagging, Hemp, yd. 20 a 22; Flax, 18 a 19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, 15.00 a —; rough, 14.00 a 14.25; Flour, N. York, bbl. 5.37 a 5.50; Canal, 5.56 a 5.75; Balt. Howard st. 5.50 a 5.75; Rh'd city mills, 6.75 a —; country, 5.00 a —; Alexandria, 5.37 a 5.50; Frederickburg, — a —; Petersburg, — a —; Rye flour, 3.75 a —; Indian meal, per bbl. 3.92 a 3.75, per hhd. 16.50 a — Grain, Wheat, North, — a —; Vir. 1.06 a 1.10; Rye, North, .60 a .70; Corn, Yel. North, .68 a .70. Barley, .64 a —; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Provisions, Beef, mess, 8.62 a 9.50; prime, 5.62 a 6.00; cargo, 4.75 a 5.00; Pork, mess, bbl. 14.50 a 15.00 prime, 10.50 a 11.25; Lard, 9½ a 10.

LINNEAN BOTANIC GARDEN AND NURSERIES.

Flushing, near New York.



WILLIAM PRINCE & SONS, having devoted a portion of their grounds to testing the qualities of the finest Esculent Vegetables of foreign countries, as well as those of our own, now offer to venders and others a most extensive assortment of the choicest seeds, possessing the advantage of being raised under their own inspection, or of being imported from their confidential friends, and tested to their satisfaction. The principal object is to supply venders with wholesale quantities, but they cannot refuse to furnish their correspondents with smaller parcels for family gardens, &c. The prices are very moderate, (particularly for quantities) it being the desire to render this branch of business profitable by its great extent, and not by enhanced prices. By reference to the catalogue it will be seen that it comprises a great number of new and choice varieties never before offered to the public; it being the intention to enrich this department with the same zeal that has been devoted to others. They have also imported the finest agricultural seeds known in Europe. The following form a part of the present stock of seeds.

2500 lbs. Cabbages, comprising all the varieties.
2000 lbs. Turnips, do including 800 lbs. Ruta Baga, and other Field Turnips.
1000 lbs. Radishes do
800 lbs. Onions do
800 lbs. Beets do including 300 lbs. mangold wurzel.
600 lbs. Carrots, do including 200 lbs. large field Carrot.
300 lbs. Cucumber do
150 lbs. Lettuces do
100 lbs. large German Asparagus.
50 bushels Pacey's perennial Ryegrass, very celebrated.
20 do Lawn Grass.
25 do English Potato Oats, weighing 44 lbs. per bushel.
20 do Early Angus Oats } the finest known in
20 do Hopeton do } Europe.
100 do Orchard Grass.
1000 lbs. White Dutch Cloverseed
1000 lbs. Provence Luzerne, the finest kind known.
150 lbs. Trifolium incarnatum.
100 bushels Canary seed, superior quality.
30 do White Mustard.
6 do Taylor's forty-fold Potatoes, which is now taking precedence in England, and proportionate quantities of all other kinds of seeds. Priced catalogues will be forwarded to every applicant, and to venders and those who desire to enter into the business, every information will be given relative to retailing, &c.—The articles will be packed in a superior manner, and forwarded with the utmost despatch.
Packages for Ohio, and the other Western States, can be sent during winter by way of Baltimore or Philadelphia by the transportation line.
January 17, 1834.

21.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price for it Address

I. I. HITCHCOCK,
Amer. Farmer Establishment.

AGRICULTURAL BOOKS.

The collection of Agricultural and Horticultural Books for sale at this Establishment, is probably more extensive than can be found elsewhere in this country. The following are recently added to the former list:

The Farmer's Own Book or Family Receipts for the Husbandmen and Housewife, being a compilation of the very best receipts on Agriculture, Gardening and Cookery, with Rules for keeping Farmer's accounts, by H. L. Barnum, editor of the Farmer's Reporter.—Price 50 cents

The American Ready Reckoner, designed to insure correctness as well as dispatch in business, by John A. Hersey, Price \$1.00.

Forty Years Residence in America, or the doctrine of a Particular Providence, exemplified in the life of Grant Thorburn, seedsman, New York, written by himself.—Price \$1.00.

Williams' Vegetable World.—Price 50 cents.

CLOVERSEED—AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK,

American Farmer Establishment.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

I have in store AGRICULTURAL IMPLEMENTS, of almost every description, which I endeavor to manufacture in the best manner and of the best materials, and to afford them on reasonable terms with a liberal discount to wholesale dealers. I have likewise on hand, a general assortment of GARDEN SEEDS, suitable for the season, and a small quantity of ORCHARD GRASS SEED, of Judge Dorsey's raising, and all kinds of Grass Seeds bought and sold by me.

N. B. Wanted immediately, Timothy, Clover and Orchard GRASS SEEDS, for which cash will be given.

J. S. EASTMAN.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven English Elm, Sugar and Silver Leaf Maple, Horse Chestnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

BALTIMORE PRICES CURRENT.

Tobacco.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a —.—Rappahannock, 3.00 a 4.00.—Kentucky, 4.00 a 8.00. The inspections of the week comprise 3 hlds. Maryland; and 60 hlds. Ohio—total 63 hlds.

FLOUR.—Best white wheat family, 6.50 a 7.00; 2d. quality, 6.00 a 6.50; super Howard street, 5.00 a —; (wagon price, 4.87½ a 5.25); city mills, 4.87½ a 5.00; city mills, extra, 5.12½ a —.—CORN MEAL, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—GRAIN, red wheat, 90 a 1.00; white do 1.15 a 1.20.—CORN, yellow, 55 a 56; white, 54 a 55; in the ear, — a — per bbl.; RYE, 65 a 66; chop rye, per 100 lbs. 1.50 a —.—OATS, 35 a 36.—BEANS, 1.50 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—CLOVERSEED, 4.50 a 5.00; TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—Luzerne 37½ a —.—lb.—BARLEY, — a —.—FLAXSEED, 1.62½ a 1.70.—COTTON, Va. 12 a 13; Lou. 14 a 15; Alab. 12½ a 14; Tenn. 12 a 13; Upland 12½ a 14 —.—WHISKEY, hlds. 1st p. 24 a 25; in bbls. 23 a —.—Wool, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—Unwashed, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24 —.—HEMP, Russia, ton, \$165 a 185; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—Feathers, 37 a 39; Plaster Paris, per ton, 3.75 a —; ground, 1.37½ a — bbl.—Iron, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 75.00 a 85.00.—Prime Beef on the hoof, 6.00 a 7.50.—Oak wood, 4.50 a —; Hickory, 6.00 a —; Pine, 3.50 a —.

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Editorial, Culture of Silk in the West—On Keeping a Day-book—Preventive and Cure for Black Tongue in Horses—A Paper read by a Member before the Agricultural Board for the Eastern Shore of Maryland—On the Smut in Wheat—Effectual Remedy against the Ravages of the Hessian Fly—Sheep, on the value of the different breeds—Saxony or Merino, Lincoln and Teeswater, Dishley or new Leicester, Southdown and Herefordshire—On the most valuable species of Sheep, best mode of keeping Milch Cows, value of Oxen, present mode of Farming, &c. by Samuel Stevens—On the different varieties of the Pine—Qualities of Vegetable Food commonly used in Diet—Preserving Butter—Scraps—Remarks on Elementary Substances as applicable to Agriculture—Air Plants—Sore Tongue in Horses—Prices Current of Country Produce in the New York and Baltimore Markets.—Advertisements.

GENERAL

Agricultural and Horticultural Establishment; COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

— An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

DIRECTION OF LETTERS.—Address all business letters concerning the Farmer, the store, or the agency, to the proprietor, "I. I. Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JAN. 24, 1854.

Extracts from the preface to the "Life of GRANT THORBURN," written by himself, and recently published.

"The way in which some men's lives are sent forth into the world, is a mere insult to common sense. If a friend gets hold of it, he twists it this way, and makes a life to suit his own notion. If an enemy gets hold of it, he twists it the other way, and makes a life that might have belonged to Bonaparte's father, for aught that I know. Now, neither of them is the true life of the dead man; and were he to return from the dead, perhaps he could not discover ten lines in the whole book, that belonged to himself—only, that he was *born, lived, died, and was buried.*"

"My education consisted in little more than learning to read the Bible, and write my own name. In ciphering, I never reached the rule of three—indeed, I ever thought, that addition and multiplication were the only rules of any real use to a man in business—and I think so still; *subtraction and division*, I think, are worse than nothing."

"But this is a digression from a preface; and I am afraid the preface will be but a *fac simile* of the whole book. It will give fine scope for the critics; but they may as well keep themselves easy; for say what they will, they cannot make me angry. I hold them all, as a set of insignificant, self-created blockheads; good for nothing, that I know of, but to tear the works of decent men, and decent women, in pieces—such as Scott, Miss Edgeworth, &c."

"If I have given offence to any one, it was not my intention; and am willing to make him any reasonable satisfaction—any thing but standing up to be shot at, and so to have blown away what little quantity of brains I may happen to have in my head. I ever thought this was the poorest way of closing a concern that could be met with. They may call it honor—but they are very welcome, for all me, to the full share of having their skulls most honorably blown in pieces, for the satisfaction of any blockhead."

"It was about the year 1806, when Bonaparte, the great land-sweeper, and the ships of George, the great sea-sweeper, told the Americans, that if they presumed to trade to any, save their own respective ports, they, viz., George said if you go to France, and Bonaparte said if you go to England, we will sink, burn, and destroy your ships—and for a very substantial reason, too, viz.: 'That, whereas the Americans had only *six fir-built frigates*, with a piece of *striped buiting* at the mast-head; therefore, it was the very height of presumption in them to talk about *naval rights.*' This very *equitable*, and very elegant sentiment, was spouted from the mouth of one of the common members of parliament, in that notable year, when the sun was almost totally eclipsed. At this moment, had one of the astrologers of his country but whispered in his ear, the first fir-built frigate that is laid alongside of one of your royal oaks, will sink her in fifteen minutes—how would he have been confounded? But such really turned out to be the fact."

"A word of apology, and I have done. No doubt some of those sober-sided old bachelors will smile at a man of sixty-one, speaking so highly in praise of the ladies;—but to be serious, the disinterested choice, (to call it by no *softer* name,) of Rebecca—her sweet and winning manners—her despite of gold, when she *thought* worth was in the other scale—and withal, her being the first of the sex, in whose company I had spent *ten quiet minutes*, altogether gave me so high an opinion of her sisters, that the impression was *stamped*, where death can only rub it out."

The friendship of great men is an acquisition, yet their favors are to be solicited with modesty.

No. 46.—Vol. 15.

(From the London Spectator.)

TRAVELLING BY STEAM ON COMMON ROADS.

On Saturday morning, September 7th, a steam carriage, constructed by Col. Macerone and Mr. Squire, started from the wharf, No. 19, at Paddington, with a view of running to Windsor and back. The carriage contained, including Col. Macerone, Mr. Squire, who guided it, and two working engineers, one to look after the fire behind, and one riding on the box before, eleven persons, and might weigh about three tons and a half. The place of starting is about one mile from Hyde Park Corner, making the distance to Windsor twenty-four miles. The carriage reached the new inn at Windsor in two hours and fifty-six minutes. Including stoppages it went at the rate of nearly eight miles an hour; excluding the stoppages, it travelled at the rate of twelve miles an hour. The time was carefully marked between the mile-stones; and it was found that the speed was at the rate of ten, twelve, thirteen, eleven, and at one time at fourteen miles per hour. On its return, the axle broke, and its progress was stopped; but this is an accident which can be easily guarded against in future. The carriage with which this trip was made, consisted of an open chariot placed before a steam boiler. The merit of the invention consists, we understand, in the boiler. The engine is of the high pressure kind, and has generally been worked at the pressure of one hundred and fifty pounds to the square inch; but on the trip to Windsor the pressure was not equal to that. The whole of the machinery, except the boiler and fire-place, which are behind the chariot, is placed horizontally beneath the carriage, and between a strong frame of wood-work. The size of the whole is not greater than that of an omnibus, and the carriage is capable of being made ornamental.

Colonel Macerone, in a letter to the Morning Chronicle, says:

"I do not know what it may cost to work other steam carriages, but it is essential that you should be informed that, in our journey to Windsor and back, (forty-eight miles,) we did not consume so much as five sacks of coke; which, at two shillings a sack, makes ten shillings, the expense of propelling a carriage which is capable of carrying many more passengers, besides luggage, than a four-horse stage-coach."

He also adds, in allusion to the comparative cost of running steam or horse carriages:

"The former are exempt from all tax, while the latter have to pay three pence or more per mile, which alone, as I have shown, above, is equal to the whole cost of the steam coach's propelling power—the fuel. Lord Althorp positively assured us, in the House of Commons, in July, 1832, that he exempted steam carriages on common roads from all tax, for the sake of encouragement—'not that he was very sanguine as to their being speedily brought to answer.' As it is, we pay turnpikes equal to a four-horse carriage, although we have no horses' feet to pound up the road, and our broad vertical cylindrical wheels do more good than harm."

AGRICULTURAL ENTERPRIZE.—At a meeting of the Ohio Company for the importation of *English Cattle*, held at Madeira's Hotel, in Chillothe, on the 27th ult. it was resolved, that Mr. Felix Renick, of Ross County, a successful dealer in stock, and an excellent judge of cattle, be appointed agent of the Company to proceed to England, with a little delay as possible, for the purpose of selecting and purchasing a stock of the finest cattle to be met with in that country.

We cannot help expressing our best wishes for the success of so spirited an undertaking. In Ohio, a country abounding with the finest grasses, there is every advantage for improving the breed of stock, which forms so important a part of the export product of the State.—*Nat. Intel.*

THE LARGE OATS.

An eastern subscriber, in making a remittance in a letter of the 9th inst. replies as follows, to an inquiry made in the Farmer some time since.

"My unwillingness to tax you with postage, from such a distance, in reply to an inquiry made in your valuable paper of July 20, 'where the large oats can be obtained that weigh *forty eight pounds* to the bushel?' has prevented my offering till now, the required information. They may be obtained from either England or Scotland, where their first cost is from six to seven and even eight shillings sterling the bushel, making the cost in this country from two to three dollars a bushel. I last spring obtained a few bushels of such oats by a packet ship from London; the kernel was round, thin skinned, and without tail, weighing forty-eight pounds per bushel. They were sown on a light piece of ground the 3d of May, and were harvested the 21st of August. The straw was firm, and stood up well and the yield appeared abundant, but I question if the produce will weigh as much per bushel, as the seed. For this difference there are at least two sufficient causes—the one is that the soil was too poor; the other that in consequence of not having English seed enough to sow out the field, it was finished with the common white oat of the country, weighing not more than 32 lbs. the bushel. This last circumstance would destroy my confidence in the produce as seed oats, though I still consider them infinitely better than the common oats for that purpose: when thrashed, I shall ascertain their weight per bushel."—*Gen. Farmer.*

We shall within a few days receive for sale a few bushels of the heavy oats here spoken of. See advertisement.—*Ed. Am. Farmer.*

(From the Maine Farmer.)

MR. HOLMES.—I learn from a verbal source that the Hon. Henry Warren, of Palmyra, has raised, during the last season, on one-fourth of an acre of land, 300 bushels of that excellent root for stock called *rutabaga*. If so, my request is, that he would send you for publication, on what kind of land it grew; the time and manner of sowing it; quantity and kind of manure used; mode of culture; expense of his crop, and also his views as to its worth for stock, hundred for hundred, compared with English hay, potatoes, meal, &c. with such other remarks as he may think useful to farmers. From his known urbanity I have no doubt that he will comply with the request. If he raised 300 bushels on one fourth of an acre of land, and their weight was only sixty pounds per bushel, which is believed to be less than their average weight, he obtained *Eighteen Thousand* pounds from his quarter of an acre, and after this rate, *Seventy-two Thousand* pounds to the acre.

Now suppose this be equal for stock, if properly fed out, to hay, he must have obtained, calling 2000 pounds a ton, no less than at the rate of *Thirty six Tons* of forage, equal to hay, to the acre. This would be harvested at less expense than hay, and at not so busy a time of the year. The leaves of this crop are worth very considerable for cattle and swine during the summer.

A CORRESPONDENT.

In a late popular romance is the following excellent advice, which deserves to be engraven in golden letters in the office, counting-room, or workshop of every man of business.

"Let no man trust till to-morrow—it is the cheat of life—the future that never comes—the grave of many an unborn enterprize of noble birth, which like the lightning's flash, is born and dies ere the voice of him who sees can cry *BEHOLD.*"

Let there be some end to your searching after riches, and since you have more than enough, be in less dread of poverty.

AGRICULTURE.

(From the Sugar Cane Manual.)
CULTIVATION OF THE SUGAR CANE.

(Continued from page 347.)

CHEMICAL HISTORY OF CANE JUICE.

When the cane has arrived at maturity, its juice contains, besides the water of solution, sugar, gum, vegetable mucilage, albumen, gluten, green fecula (or green coloring matter,) and lignin, to which may be added several free acids and salts, which, however, exist only in minute proportions, without exercising any appreciable influence over the process of obtaining the sugar in a separate state. The properties of these ingredients require a separate elucidation: this we shall attempt, in the first place, under the idea of their existence in an insulated condition, or in a state of purity, and afterwards as they present themselves united in the cane liquor.

1. *Sugar.* This substance when in loaf, consists of an aggregate of little crystalline grains, is white, inodorous and of a well known sweet taste.

It is hard, brittle, and emits a phosphorescent light, when two pieces are rubbed together in the dark. Its specific gravity is 1.6065.

When a saturated solution of it, in water, is left to spontaneous evaporation, in a warm place, it crystallizes in very perfect oblique rhombic prisms, whose acute lateral edges are often truncated, and whose summits are terminated by two or more planes. These crystals are transparent; and although heated to the point of fusion, they lose no weight.

Stove-dried loaf sugar is also anhydrous or destitute of water; and appears to be unalterable in the air. It becomes fluid at a heat somewhat below 300° of F.: when the heat is raised above 302° of F., decomposition commences, attended with a peculiar odor, called by the French, *caramel*. At a temperature, a little below ignition, it bursts into a flame, affording the usual products of the destructive distillation of vegetable matter.

Sugar is soluble in water in nearly all proportions. When dissolved in one-third of its weight of that fluid, it forms a syrup which keeps well in close vessels; but if more highly diluted with water, it rapidly changes, particularly if in contact with air,—becoming sour and mouldy. The addition of certain vegetable, or vegetable animal substances, such as albumen and gluten, or of yeast, produces a reaction among its constituent elements, which gives rise to the vinous fermentation,—a process in which the sugar is converted into carbonic acid and alcohol, the former of which is disengaged with effervescence, while the latter remains, in a great measure, in the liquid.

Sugar is soluble in about four times its weight of boiling alcohol of the specific purity 0.83, which, on cooling, deposits the greater part of the sugar; but it is probably insoluble in absolute or pure alcohol.

It is altered by the action of acids. Concentrated sulphuric acid, poured upon it, becomes blackened, and on being diluted with water, a carbonaceous precipitate ensues. The effect of nitric acid on sugar, is to transform it into malic and oxalic acid. Oxalic or tartaric acid, added in the proportion of three per cent. to sugar, destroys its power of crystallization, nor is it restored when these acids are saturated by carbonate of lime or carbonate of lead.

Sugar enters into chemical combination with the salifiable bases. Dissolved in a ley of potash, it loses its sweet taste and gives, after evaporation, a mass which is insoluble in alcohol; but on the addition of the requisite quantity of some acid to engage the alkali, the sugar re-appears in the solution, possessed of its original properties. When introduced, in the condition of a fine powder, into a bell glass of ammoniacal gas, over a mercurial bath, the gas is gradually absorbed, while the sugar becomes compact and soft, to such a degree as to allow of being sliced with a knife.

It emits the odor of ammonia. Analysis proves it to consist of 90.28 parts of sugar, 4.72 of ammonia and 5.00 of water. In the air, this compound undergoes a spontaneous decomposition.

Dissolved in water, sugar combines with the hydrates of the alkaline earths, forming with them an uncrystallizable mass of a slightly sugary odor, and a bitter astringent taste. When a solution of such a compound is evaporated, it becomes viscid and at length hardens into a yellow, gummy mass,—exhibiting, when broken, a conchoidal fracture.

According to the experiments of Daniel, sugar dissolves about one-half its weight in lime. Having boiled together, for half an hour, 1,000 parts of sugar, 600 of quicklime and 1,500 of water, and having examined the liquor, after its cooling, he found that it contained in 100 parts, 16.5 of lime and 33.2 of sugar, and that in evaporating it slowly, it assumed a solid consistence with the aspect of gum, in which, when the compound was freshly decomposed, the sugar manifested its original properties; but, on being left for several months in a moist condition, the lime separated itself in the state of carbonate of lime, crystallized in very acute rhomboids, while the sugar was transformed into a mucilaginous gum.

Sugar, according to Berzelius, forms with oxide of lead two combinations, of which one is soluble, the other insoluble. By digesting a solution of sugar with a certain quantity of oxide of lead, a liquid solution is obtained, which has the reaction of alkalis, and leaves, after evaporation, an uncrystallized, viscid mass, which attracts moisture from the atmosphere. When a solution of sugar, boiled with an excess of oxide of lead is filtered and corked up from the air in a vial, it deposits after 24 hours standing, a voluminous, white precipitate, which on being separated and dried, is destitute of taste, and insoluble in cold and boiling water. Its drying requires to be effected *in vacuo*, in order to avoid decomposition. It burns like tinder, when a mass of it is lighted at one extremity,—leaving behind numerous little globules of metallic lead. It is soluble in the acids, and likewise in the neutral acetate of lead, which forms with the oxide of lead a sub salt, and sets the sugar at liberty. Its powder, mechanically suspended in water, is decomposed by a current of carbonic acid gas, passed through that liquid,—the sugar making its appearance in the solution, while the carbonate of lead falls to the bottom. This compound of sugar and oxide of lead is insoluble in alcohol. By analysis, it affords 58.26 oxide of lead and 41.74 sugar.

Sugar does not combine with any salt, although it decomposes several metallic salts. It has the remarkable property of dissolving the carbonate and the sub-acetate of copper, and of thus giving rise to a green liquid, from which the oxide of copper is not precipitated by alkalis, but by ferro cyanuret of potash and by sulphuretted hydrogen. Dr. Ure is of opinion that no re-agent is capable of precipitating the copper from the solution of sub-acetate of copper in sugar. Sugar boiled with solutions of the salts of copper is known to act upon them by effecting their reduction. When the sulphate of copper is thus treated, metallic copper is precipitated, a part of the cupreous salt remains in solution, and there is thrown down with the metal a brown substance soluble in ammonia. The nitrate of copper submitted to the same treatment, gives no precipitate, but it is transformed into a cupreous salt, and potash forms in the solution, a yellow precipitate of hydrate of copper. Sugar boiled with the acetate of copper, occasions a copious precipitation of the oxide of copper.

By the aid of chalcillon, sugar, added to a solution of nitrate of silver, affords a pulverulent, black precipitate whose composition is unknown.

The chloride of gold gives a pulverulent red precipitate. When sugar is added to a solution of a salt of iron, the oxide of iron is not wholly precipitated by ammonia.

The analysis of perfectly anhydrous sugar has been

made only by Berzelius. In burning the compound of sugar and oxide of lead, he obtained from 100 parts of sugar 57.5 to 57.75 parts of water, and 16.25 to 16.3 of carbonic acid, which leads to the following conclusion as to the composition of sugar:

Carbon	-	-	-	44.99
Hydrogen	-	-	-	6.41
Oxygen	-	-	-	49.60

Common sugar, or sugar not perfectly anhydrous, has also been subjected to analysis by Berzelius, as well as by other chemists, the results of whose labors are as follows:

	Prout.	Gay, Lussac & Thenard.	Berzelius.
Carbon	42.85	42.47	42.225
Hydrogen	6.44	6.90	6.600
Oxygen	50.71	50.63	51.175

2. *Gum.* This is a transparent, colorless substance. It is uncrystallizable, occurring in the form of small globular masses. The fracture is conchoidal, with a vitreous lustre, and a specific gravity of between 1.31 and 1.49. It is destitute of lustre or odor.

It contains no water; but when an aqueous solution of it is gradually evaporated, the gum retains, even when perfectly dry, about 17 per cent. of water, which it gives up on exposure to a heat of 100° *in vacuo*.

It is slowly, but completely dissolved in water in every proportion, and more readily in warm than in cold water.

The solution is mucilaginous, tasteless and inodorous: its viscosity presenting very minutely divided matter suspended in it, from being deposited. If, for example, a metallic salt, as acetate of lead, be added to a solution of gum, and a current of sulphuretted hydrogen be passed through the resulting fluid, the sulphur will not be precipitated, but will remain mechanically suspended in the solution.

For the same reason, gum hinders sugar and the soluble salts from crystallizing.

Left to itself, a solution of gum gradually becomes acid,—exhaling an odor like acetic acid.

Gum is soluble in alcohol and in ether.

Alcohol precipitates it, although imperfectly, from its solution—the precipitated liquid remaining, for a long time, milky.

Gum is equally soluble in acids or in water,—the concentrated acids altering its composition. Strong sulphuric acid decomposes it,—causing the formation of water and acetic acid, with a deposition of charcoal. Nitric acid, aided by a mild heat, occasions the evolution of nitric oxide gas, and on cooling, the liquor deposits mucic acid, in the proportion of from 0.14 to 0.25 times its weight of the gum. By a protracted digestion, malic and oxalic acids are obtained.

Gum forms definite compounds, with salifiable bases. If a concentrated solution of gum be mingled with a solution of potash, a coagulated precipitate makes its appearance,—consisting of gum and alkali, which afterwards dissolves. When alcohol is added to the solution of this compound, which contains an excess of alkali, the combination of gum and alkali is precipitated, while the excess of the potash remains in solution. The precipitate is of a curdy nature, which when dried is easily reduced to powder, and may be again dissolved in water.

Gum unites with the oxide of lead, when a solution of the former is digested with the latter, and the union is promoted by levigation. The compound is insoluble. It may be obtained also by mingling a solution of gum with the sub-acetate, or sub nitrate of lead. The mass is curdy. After washing and drying, it is white, and easily reduced to powder. It consists of 61.75 gum and 38.25 oxide of lead. Exposed to the action of heat, gum is decomposed, giving rise to the same products and phenomena as other vegetable matter: i. e. to acid water, empyreumatic oil, carbonic acid gas, carburetted hydrogen gas and a spongy charcoal. When heated, it yields also a small quantity

of ammonia, which is believed to be owing to some impurity, probably gluten, with which it is generally associated. The following are the results obtained from the analyses of gum arabic, 1 by Gay, Lussac and Thenard, and 2 by Berzelius:

	1.	2.
Hydrogen,	6.93	6.374
Carbon,	42.23	42.682
Oxygen,	50.84	50.944

3. *Vegetable mucilage.* This proximate principle of plants presents itself under the form of a jelly, more or less translucent, which, when diluted with a large quantity of water and thoroughly blended with it, becomes so attenuated, as to pass through paper like a viscid liquid, every drop drawing after it a thread, whose upper portion, when it breaks, rises to the paper. In this condition, the mucilage appears to approach to the state of a solution; but on employing a smaller quantity of water, it is seen to be only a mere swelling of the mucilage which takes place, as appears from the fact that the mass, on being thrown upon blotting paper, communicates to it none of its mucilaginous properties.

After drying, the mucilage forms a hard mass, translucent, white, or yellowish, without taste or odor, and which swells up, and becomes a second time buoyant on water.

Like gum, it affords the smell of ammonia by distillation, but it is not known whether it contains nitrogen, or whether this element comes from some foreign matter with which it may be associated.

The alkalies and acids dissolve, and destroy its mucosity, converting it into a matter analogous to gum. When subjected to a boiling temperature in a large quantity of water, the same change is said to take place.

It is not improbable that mucilage is only a modification of gum, or possibly an incipient gum.

4. *Gluten* is possessed of the following properties: when dry, it is of a pale yellow color, translucent, hard and brittle; when moist, it adheres tenaciously to the fingers, and has considerable elasticity. It is without smell or taste.

It is ordinarily slightly acid, owing to the acids with which it is combined, as the acetic and phosphoric.

It is insoluble in water and ether, but dissolves readily in hot alcohol, apparently without any change of properties; but if the alcoholic solution is evaporated to dryness, the gluten is left as a transparent varnish.

It swells up and softens with acetic acid, forming a compound which is soluble in water and precipitable by nut galls. It unites also with the mineral acids; and these compounds, excepting that with sulphuric acid, dissolve readily in pure water, but are insoluble when there is an excess of acid. It is dissolved by a dilute solution of potash, apparently without being decomposed; for the gluten after having been thrown down by the mineral acids, retains its viscosity. In this state, however, it is combined with some of the acid. Ammonia and lime exert but little action upon gluten, when in the solid form; but when to a solution of gluten in an acid, caustic ammonia, or lime, is poured, drop by drop, a precipitate is formed which quickly disappears.

The combinations of gluten with the other bases are all insoluble in water, and are precipitated when a solution of the compound of potash and gluten is mixed with the earthy or metallic salts.

The alkaline carbonates do not dissolve gluten immediately. They precipitate it from its solution in the acids, and the more completely according as a greater quantity of the precipitate is added, and as the solution is more concentrated. The chloride of mercury forms an abundant white precipitate in acid or alkaline solutions saturated with gluten. In this case, the gluten combines with one portion of the salt, after the manner of many animal substances. Exposed to

a strong heat, gluten yields, in addition to the usual inflammable gasses, a thick fetid oil and carbonate of ammonia.

5. *Albumen.* This substance exists in all vegetables whose sap coagulates by heat. It is soluble in water, until it has been inspissated by heating, which renders it completely insoluble. On being dried, it becomes opaque, and assumes a white, grey, brown or black color.

It is insoluble in alcohol. The caustic alkalies dissolve it readily; it neutralizes their caustic taste, and is precipitated from its union with them, on the addition of an acid in great excess.

The solution of albumen may be rendered so acid as to redden the paper of turmsole with it, occasioning any precipitate, the liquid simply becoming milky, and resuming its transparency on being heated. By a very considerable excess of acid, however, the vegetable albumen is thrown down; and the precipitate is a chemical combination of albumen with the acid which is scarcely soluble in the acid liquor, but soluble in pure water.

The latter solution is easily precipitated by the acids, ferro-cyanate of potash, chloride of mercury and nut galls. When a solution of the potash completely saturated with albumen is mingled with a solution of any metallic or earthy salt, corresponding compounds of albumen with the bases are obtained. These compounds are nearly all insoluble.

Vegetable albumen is not dissolved by the alkaline carbonates, and after having been coagulated, it ceases to be soluble in caustic ammonia. If carbonate of ammonia is added to a saturated solution of albumen in potash, a part of the albumen is precipitated, but the precipitate is re-dissolved in a large quantity of water. Carbonate of ammonia precipitates it from its solution in the acids, better than any other re-agent; nevertheless it retains a certain portion of it.

Albumen and gluten, in consequence of their great resemblance to the white of an egg, and to the fibrine of animal fluids, have received the common name of vegetable animal substances. They contain not only nitrogen, as is evinced by the evolution of ammonia from their destructive distillation, but they often contain sulphur and phosphorus. When left to themselves in the humid state, they undergo the putrid decomposition, attended by the disgusting odor of animal putrefaction, the disengagement of ammonia and the production of acetate of ammonia. At a certain stage of their decomposition, both when united and when separate, they afford the odor of old cheese.

Gluten and albumen, when aided by water and heat, exert jointly, and perhaps separately, a very remarkable action upon starch. Two parts of potato starch are mixed with four of cold water, gradually diluted with 20 parts of boiling water and blended with one part of dried and powdered gluten and albumen; the composition is exposed, during 8 hours, to a temperature of between 50 and 70° C. After about 2 hours, it loses its consistence, and the reaction takes place rapidly, so that the liquor becomes very fluid, transparent and sugary. One part of the starch is transformed into gum, and another into sugar; the mixture not absorbing either of the gases of the air, but emitting a small quantity of carbonic acid gas.

According to Saussure, cold diluted alcohol, added to the mixture in a dry state, dissolves a quantity of sugar, equal to 1-7th of the starch employed, and water removes from the residue a quantity of gum equal to one-fifth of the starch. The remainder consists of a mixture of starch not altered, and of gluten which is acid, and has lost almost totally the property of reacting on the starch.

6. *Green Eecula.* This is the herbaceous matter of Dr. Higgins. It is the coloring matter of the leaves and stalk. Its prevailing hue is green, although other colors, as red and yellow, enter into its composition. It is precipitated from the sap of plants by lime water, barytes and strontian, and by the salts of these bases. The precipitates are of a yellowish green color and

insoluble in water. The coloring matter is closely associated with a waxy or resinous substance, from which it has never been perfectly freed. The compound is bleached by exposure to the sun and by chlorine. The acids also destroy its color. Caustic potash converts it into soap. It is soluble in alcohol and ether, and in fixed and volatile oils. When plants approach the period in which their fruit become perfect, the waxy matter assumes a yellowish color.

7. *Lignin* constitutes a porous tissue by which the sap of plants is conducted from the root to the branches. It constitutes the skeleton of vegetables, and is what remains after a plant or a part of a plant has been treated with ether, alcohol, water, dilute acids and alkalies. Owing to its porous texture as well as its chemical affinity for coloring matter it is frequently stained of some color, especially in the dead plant. Concentrated sulphuric acid converts it into gum; and nitric acid, into oxalic acid. The concentrated solutions of alkalies dissolve it into a homogeneous mass, having an empyreumatic odor and a blackish color, and containing acetic and oxalic acids.

Free Acids and Salts in Cane Liquor.

As these exist in cane liquor in almost inappreciable proportions, and do not exert a perceptible influence upon the process of separating the sugar, it will not be necessary to enter into a minute detail of their properties. The acids are two in number; the acetic and malic.

(a.) *Acetic acid* is distinguished from all other acids by its smell and flavor. Its acidity is well marked, as it reddens litmus paper powerfully, and forms neutral salts with the alkaline and earthy and metallic bases. It is exceedingly volatile, rising rapidly in vapor at a moderate temperature, without undergoing any change. Its vapor is inflammable, burning with a white light. In its most concentrated form, and under a temperature of 50° F., it crystallizes. It consists of 52.95 oxygen and hydrogen, in the proportion to form water, and 47.05 carbon. The salts of acetic acid are called acetates. They are all soluble in water, the solutions being liable to a spontaneous decomposition when exposed to the air. They are eminently deliquescent and are destroyed by a high temperature.

(b.) *Malic acid* has a very pleasant acid taste. It crystallizes with great difficulty, and in an imperfect manner, attracting moisture from the atmosphere, and is very soluble in water and alcohol. Its aqueous solution is gradually decomposed by keeping. Nitric acid converts it into oxalic acid. Most of the salts of malic acid are more or less soluble in water. The malates of soda and potash are very deliquescent.

The salts in cane liquor are the following: 1. Acetate of lime: 2. Acetate of potash: 3. Super malate of lime: 4. Sulphate of lime.

1. *Acetate of lime* crystallizes in silky fibres, is very soluble and possessed of a sharp bitter taste, its solution, when exposed to the air, undergoes a spontaneous decomposition, the lime being converted into carbonate of lime and the acetic acid set at liberty, in the solution.

2. *Acetate of potash*, when cautiously evaporated, forms irregular crystals, which are obtained with difficulty, owing to the deliquescence of the salt. Its solution, even in closely stopped vials, is spontaneously decomposed.

3. *Super malate of lime* is very soluble in water, but insoluble in alcohol. When the solution is evaporated, it appears under the form of a yellowish, or brownish gum.

4. *Sulphate of lime*, as obtained from plants, is in the condition of an impalpable white powder. It requires 461 7-13 parts of cold water for its solution, and is scarcely more soluble in hot water. It is insoluble in alcohol. It contains, when dry, 20.78 per centum of water.

To give a tabular view of these constituents, we have then, in cane juice,

Water,	Acetic acid,
Sugar,	Malic acid,
Gum,	Acetate of lime,
Vegetable mucilage,	Acetate of potash,
Albumen,	Super malate of lime,
Green Fecula,	Sulphate of lime.
Lignin,	

Other principles may hereafter be detected in cane liquor, but the foregoing are all of which at present we have any evidence. It has been ascertained, however, that the rind, in common with the other plants of the same natural order, contains a large proportion of silica.* Of those principles which appear to be essential to the constitution of cane liquor, the proportions in which they are present, vary with the nature of the soil and climate which produces the cane, with the drought or humidity of the season, and with the maturity to which the plants have been allowed to attain. But before alluding to the relative proportions of these principles in cane juice, it is proper to glance at the probable economy of nature in their production.

The first modification which the sap undergoes, by the peculiar vessels of the cane, results in the formation of vegetable mucilage, gum and green coloring matter. With the production of these, the farther elimination of the vegetable structure goes forward. Gluten and albumen are subsequently elaborated, and these are followed by sugar, the acids and salts; mucilage and gum are the parent substances of all the principles of cane liquor, if we except the mineral bases, which are introduced along with water through the roots. In the early stages of the plant, accordingly, we find in the cane juice, little else than water, gum, mucilage and green coloring matter with minute traces of carbonate of lime, carbonate of potash and sulphate of lime. As the plant approaches maturity, the other principles above mentioned appear; the quantity of water diminishes; gluten and albumen begin to exert their influence upon the gum, converting it into sugar, at the same time giving rise to acetic acid and malic acid, which appear to decompose the carbonates of the unripe juice, and the acids accumulate, over and above, in the solution so as to be indicated by their usual effects upon the tests.

When the plant has attained its full maturity for grinding, little or no coloring matter is contained in the juice, while the gum and mucilage have given place to sugar, and the proportion of albumen over that of gluten seems to have increased; a portion of the water has also passed off by evaporation, through the leaves, leaving behind, a more or less strong saccharine solution. If the season, however, be a moist one, the conversion of gum into sugar is impeded by the want of concentration in the sap, as well as from a deficiency of solar influence, both of which conditions are requisite to perfect this change. Or, again, if the latter end of the cane season become wet, even after the plant has attained its maturity, water is taken up by the absorbing vessels, and the solution not only becomes dilute, but a conversion of some of the saccharine matter into gum ensues, attended also by a farther production of acetic acid.

Several analytical examinations of cane liquor have been made in different countries, which give us, however, only an approximative idea of its constitution, as respects the proportions among its elements. According to the strength, or specific gravity of cane juice, it contains, dissolved in water, which is the principal vehicle of vegetable solutions, from 10 to 23 per cent. of principles soluble in that fluid, of which from 3 to 20 per cent. is sugar, while the remainder is chiefly gum, fecula and albumen. In case, however, the juice comes from very immature cane, so as not to afford above 6 or 7 per cent. of sugar, it is pre-

sumable that the other ingredients bear a considerably higher ratio to the sugar, than is expressed above.

Of the solubility of these different ingredients, nothing need be said, with the exception of green fecula and gluten, as all the other ingredients are obviously soluble in water. Green fecula may owe its solubility, in part, to the mucilage, while the gluten is probably maintained in solution by the free acids.

The art of making sugar consists in isolating the concrete sugar from all the substances with which it is associated in cane liquor. We shall now give an account of this art as it is practised in Louisiana, and in Georgia and East Florida; treating the subject under the five following heads, viz: 1. Grinding of the cane—2. Defecation of the juice—3. Evaporation—4. Granulation—5. Potting.

(To be continued.)

(From Goodsell's Genesee Farmer.)

SOILING—ITS ORIGIN AND ADVANTAGES.

"The feeding of cattle,* in stalls or other suitable places during the growing season, with grass cut and carried to them, is a practice denominated soiling of cattle; and prevails extensively in Great Britain and some parts of the United States.

This practice, like many others, which have led to important discoveries and improvements in the science of agriculture, must have probably originated from the necessities of those who occupied but small tracts of land, and who needed the produce of more stock than could be sustained from common pasture, as it is generally improved. This practice cannot therefore be recommended to that class of farmers, which perhaps are the most numerous in this country, who possess considerable tracts of land, which can hardly be rendered suitable for any purpose but pasturage; or to that class, who, without the greatest regard to the neat profits, would rather indulge a disposition to consult their ease in their modes of cultivation; but to that class whose farms are small, and who are stimulated by the laudable ambition of improving a little land highly cultivated, rather than a great farm badly managed; and to that class also whose whole farms are capable of being either tilled or mown, particularly when their condition is such that they cannot easily procure manures.

The advantages to be derived from soiling, have been recommended by some very celebrated authors, and other eminent farmers of Great Britain.

Dr. Thier, physician to the Electoral court of Hanover, in a communication to the English Board of Agriculture, lays down the following as facts which are incontrovertible, as the result of the experience of the Baron de Bula and others: "That a spot of ground which, when pastured, will yield only sufficient food for one head, will abundantly maintain four when kept in the stable.

"Soiling affords at least double the quantity of manure from the same number of cattle; for the best manure is produced in the stable, and carried to the fields at the most proper period of its fermentation; whereas when spread on the meadow, and exhausted by the air and sun, its power is entirely wasted.

"Cows which are accustomed to soiling will yield much more milk when kept in this manner; and fattening cattle will increase much faster in weight.

"They are less subject to accidents and diseases, they are protected from the flies, which torment them in the fields during warm weather; and they do not suffer from the heats of summer."

As it respects the quantity of land saved by soiling, it must, in some measure, depend on the nature of the soil, and the condition of the land appropriated for that purpose. All the writers on this subject, as well as

* In agricultural science, the general name of cattle is given to all tame animals which are fed in pastures, and the term neat cattle, is used to distinguish the low kind from others.

many other practical farmers, appear to be well agreed in this one point, that a given quantity of land may be made to sustain many more cattle, and to keep them better, by soiling than by pasturing them. The great question is, whether the economy on land and saving of manure is a sufficient compensation for the extra labor.

There can be no doubt but that the practice of soiling would be very profitable to those who would derive the greatest profit from a small tract of land; and many who practise it upon a large scale, think it good husbandry.

DOMESTIC ANIMALS.

(From the New England Farmer.)

BREEDS OF DOMESTIC ANIMALS.

"Mr. Bakewell of the Dishley farm in England has rendered himself famous by his breed of cattle. His principal aim is to gain the best, whether sheep or cow, which will weigh the most in the most valuable joints; and the same time that he gains the shape that is of the greatest value in the smallest compass, he finds by experience that he gains a breed much harder and easier fed than others. In his breed of cattle, his maxim is, the smaller the bone the truer will be the make of the beast; the quicker it will fatten, and the weight will have a larger proportion of valuable meat."

The shape which should be the criterion of an ox, bull, sheep or cow, is that of a hoghead or barrel, truly circular, with small, and as short legs, as possible; upon this plain principle that the value lies in the body, and not in the legs. All breeds, whose backs rise in a ridge, are bad.

By proper management Mr. Bakewell brings up his cattle to amazing gentleness; his bulls stand still in the field to be handled; they are driven from field to field with a small switch. His cattle are always fat, and this, he insists is owing to their breed.

The small quantity, and inferior quality of food that will keep a beast, which is properly well made, in good order, is surprising. Such an animal will grow fat in a pasture which would starve one with great bones and ill made.

Mr. Bakewell is equally curious in the breed of his sheep. The bodies of his rams and ewes are as true barrels as can be seen; round broad backs and legs, not more than six inches long. An unusual proof of their kindly fattening is their feeling quite fat between the fore legs upon the ribs, where the common kinds never carry any fat.

He finds that hardly any land is too bad for a good breed of cattle, and hardly any good enough to make a bad breed profitable.

Mr. Bakewell was remarkably attentive to the business of watering his stock. All his horned cattle were tied up in open or other sheds during the winter, and fed, according to their kind, on straw, turnips or hay. Young cattle, which require to be kept in a thriving state, and fattening ones, were fed on roots. His farm consisted of 440 acres; 110 under the plough, and the rest in grass. He kept 60 horses, 400 large sheep, 150 horned cattle, and had generally 15 acres of wheat, and 25 of other spring grain.

The *Encyclopedia Britannica*, under the article Agriculture, gives the following notices of some of the improvements above adverted to.

"By Bakewell's skillful selection at first, and constant care afterwards to breed from the best animals, he at last obtained a variety of sheep, which for early maturity, and the property of returning a great produce of mutton for the food they consume, as well as for the small proportion which the weight of the offal bears to that of the four quarters, are altogether unequalled either in this or any other country. The Dishley or New Leicester sheep and their crosses, are now spread over the principal corn districts of Britain; and from their quiet, domesticated habits, are probably still the most profitable of all the varieties of

* M. Avequin, (from France, and at present a resident in Louisiana,) has detected in the ashes of bagasse, or the cane which has been through the mill, besides a large proportion of silica, carbonate of lime, carbonate of potash, and oxide of iron.

sheep, on farms where the rearing and fattening of live stock are combined with the best courses of tillage crops.

"The practice of Bakewell and his followers furnishes an instance of the benefits of a division of labor, in a department of business where it was little to be expected. Their male stock was let out every year to breeders from all parts of England; and thus, by judiciously crossing the old races, all the valuable properties of the Dishley variety descended after three or four generations to their posterity. By no other means could this new breed have spread so rapidly, nor have been made to accommodate itself so easily to a change of climate and pasture. Another recommendation of this plan was, that the ram-hirer had a choice among a number of males, of somewhat different properties, and in a more or less advanced stage of improvement, from which it was his business to select such as suited his particular object. These were reared by experienced men, who gave their principal attention to this branch alone; and having the best females as well as males, they were able to furnish the necessary supply of young males in the greatest variety to those farmers whose time was occupied by other pursuits. The prices at which Bakewell's rams were hired, appear enormous. In 1789 he received twelve hundred guineas for the hire of three brought at one birth; two thousand for seven, and for his whole letting, at least three thousand guineas."

(From the London Weekly Review.)

CHANGES

Which take place in the Domestic Animals of Europe when transported to America.

The mammiferous animals transported from the old to the new World are the hog, the sheep, the goat, the ass, the horse, the cow, and the dog.

1st. The Hog.—This animal, in hot valleys of South America, where he wanders whole days in the woods, living chiefly upon wild fruits, loses speedily the marks of domestication, and partakes largely of the nature of the wild boar. The year 1493 was the date of his first introduction into the New World; and now he is found established from 25 degrees north latitude, to 45 degrees south, and every where breeds as plentifully as in Europe.

2d. The Cow.—Animals of this species appear to require a considerable quantity of salt as a part of their nourishment. When salt is placed where they feed, they return punctually to seek it; but when this duty is neglected by their masters, the flock disperses and becomes wild. There is also a difference in the size of the udder, particularly in Colombia, where the milk is not reckoned of the same importance as in Europe.

3d. The Ass.—The Ass suffers hardly any alteration either in his form or habits. In some places where he is over-worked and little cared for, he becomes deformed, but no where does he lose his civilization.

4th. The Horse.—Not so with this animal; he finds chestnuts in the woods, and speedily presents one of the distinctions of wild animals—a sameness of color, which with him is almost invariably chestnut. The amble is the pace most admired by the Colombians; they accordingly breed up their horses to this mode of motion; and it is no less remarkable than true, that with the present race the amble is the natural pace, just as the trot is with ours.

5th. The Dog suffers no change.

6th. The SHEEP, in temperate climates, breeds freely as in Europe, and never shows any inclination to escape from the dominion of man. In the warmer plains they are more difficult of preservation. The wool grows slower; but if shorn at the proper time,

presents nothing remarkable. If on the other hand, this time is allowed to pass, it is detached by the shears of nature; and instead of a new crop, growing, as in other cases, a short, smooth, shining hair presents itself, resembling that of the goat of same climate.

7th. The GOAT, although with us a mountaineer, suits better the low warm valleys of South America, than the more elevated parts of the Cordilleras. The only change it undergoes is similar to that of the cow.

(From the New York Farmer.)

IMPORTANCE OF SELECTING THE BEST BREEDS OF LIVE STOCK, PARTICULARLY OF SWINE.

MR. EDITOR:—I have noticed frequently and with pleasure your remarks in regard to the importance of a careful selection of the various sorts of live stock raised in our country. If farmers were more particular to select the best breed of all the animals they raise, undoubtedly they would find it much to their advantage. There is perhaps in our country no animal in which there is greater neglect than in swine; and it becomes every man who fattens a single hog, to look to it that he gets one of the right sort. And if this be the case in regard to the man that has but one, how important it is to farmers throughout our country, that they raise only from the best and most approved breeds. It has been thoroughly proved by several persons in this region, during the last two years, that the advantages in the improved breed is greater than was before imagined. Trials have been made between hogs of the common sort called good, and a breed introduced into this neighborhood by Mr. W. K. Townsend. They were imported from England three years ago, and are called by him the *Norfolk thin rind breed*. They are small bone, thin rind, the meat very fine grained, remarkably thrifty, and inclined to fatten early, or will continue to thrive until 18 months old. It is not uncommon for all pigs kept over the season the next fall to weigh from 435 to 460 lbs., and for spring pigs butchered in the fall to go over 300 lbs and this with ordinary feed. One of my neighbors who three years since, tried hard to get two pigs of the old breed to weigh in the fall 200 lbs. each, has, the last season, with, he says, no more care, or no better feed, made two of this breed weigh 660 lbs. He considers that he has gained at least 100 lbs. of pork on each hog, by the change of breed. These pigs weighed, the 1st April, 21 lbs. each. A farmer, a few miles in the country, butchered two at 13 months old, that weighed rising 440 lbs. each, and he says he gave them the same care as he always had given his hogs; he asserts that he has gained fully 200 lbs. of better pork than he generally had, which, he says, he credits to the breed. An old Revolutionary pensioner purchased one of this breed from Mr. Townsend's farm in the fall of 1831, then a sucking pig, weighing about 35 lbs., and as he had made one from the same pen, just butchered, weigh rising of 400 lbs., he declared that he meant by the next fall to make this weigh 500 lbs. The hog was butchered, say the last of December, and the old soldier has gained one pound over his mark. These facts are stated to induce others to try the experiment of selecting their pigs from the best breeds. I am convinced myself of the importance of it, and wish others, and especially farmers, to practice on this principle.

New Haven, Jan. 20, 1833.

D.

(From Bullock's Mexico.)

MEXICAN PIGGERIES.

A fine breed of that useful animal, the pig, is kept by several persons of wealth, as an article of trade, in the city of Mexico, and the care and attention paid to their cleanliness and comfort, so far exceed any thing I have seen elsewhere, that a short account may be useful, by furnishing hints to our farmers, brewers, distillers, &c. by whom large numbers of

these valuable animals can be kept. The premises where the business is carried on are extensive; consisting, in general, of good dwelling house, with a shop, slaughter-house, and places for singeing the pigs, large bowls for rendering the lard, and lard rooms, with wooden bins for containing the rendered fat, which is an article of great consumption in Spanish cookery, being used as a substitute for butter. There is also a soap manufactory in which the offal fat is manufactured, and apartments where the blood is made into a kind of black-pudding, sold to the poor. Behind all these are the styes for the hogs, generally from 800 to 1000 in number, which occupy a considerable range of well built sheds, about 30 feet deep, with the roofs descending very low, and having the entrance through low arches, before which is an open space the whole length of the yard, and about 21 feet wide, in the centre of which is a kind of aqueduct, built of stone, and filled with clean water, supplied from a well at the end of the premises. The hogs can only put their noses into this water through holes in the walls which prevents their dirtying it, as it passes through the whole division of the yard. This is the only liquid given them; and their food is maize or Indian corn, slightly moistened, and scattered at stated hours on the ground, which in the yard as well as the place where they sleep, is perfectly dry and clean.

They are attended by several Indians with every possible care, and have a cold bath on the premises, which they are frequently obliged to use, as cleanliness is considered essential to their acquiring that enormous load of fat from which their principal profit is derived. Their ease and comfort also appear to be studiously attended to; and the occupation of two Indian lads will cause a smile on the countenances of my musical readers, where they are employed from morning till night, in settling disputes, or little bickerings that may arise among the happy inhabitants of this community, and in singing them to sleep. The hogs are chosen for the strength of their lungs, and their taste and judgment in delighting the ears and lulling the senses of this amiable harmonic society: they succeed each other in chanting during the whole day, to the great delight and edification of the audience, who seemed fully to appreciate the merits of the performers. The proprietor of one of those establishments himself attended us, and explained the use of the various apartments. He assured me that the premises cost him \$60,000, and that his sales amounted to about \$2000 per week; indeed, his display of diamonds, and his three splendid carriages, with fine horses, standing in the yard, bespoke him a man of some opulence and importance. His stock are bred at a farm belonging to him at Otumba, and driven to Mexico, to be fattened, when eight months old.

(From the Southern Planter.)

MANAGEMENT OF SWINE AT THE SOUTH.

An extensive farmer in Twiggs county, has given us some additional particulars on this subject. He makes from 40 to 50,000 weight of bacon annually. His hogs roam at large till late in the summer. When his sweet potatoes and peas begin to get ripe, he has his hogs turned in upon them, one field at a time, and allowed to remain until pretty well cleared. They are then turned into another field, and so on. He never loses any of his hogs by this course, as often happens when fed upon peas alone. He thinks potatoes and peas preferable to either separate. A short time before killing, he puts them in pens and gives them corn. His hogs are the common breed—has at this time about 350 head. He plants potatoes and peas in every field especially for this purpose.

A London paper says, "Sugar is now becoming a universal ingredient in many of our soups in ordinary use, such as soup crisis, gravy soup, &c., being found to add greatly to their flavor and wholesomeness."

HORTICULTURE.

(From the New England Farmer.)

MORUS MULTICAULIS, CHINESE MULBERRY, CONSIDERED AS A HARDY TREE.

Newton, January 8th, 1854.

MR. FESSENDEN—Dear Sir, In the New England Farmer of the 1st of January inst. at page 113, I observe an article which you have republished from the same valuable journal of November 2, 1851, vol. x. page 121. It is a statement of your highly respected correspondent Judge Buel of Albany, and is as follows: "We had two plants of the Chinese Mulberry in our nursery last season, one budded, the other on its natural roots. They both grew vigorously, and both were killed by the severity of the winter, root and branch." A doubt is thence inferred, whether this desirable plant will endure the winters of northern climates, and a desire is expressed to learn how it has fared in our neighborhood. In reply to this candid statement of Judge Buel, I shall endeavor to dispel any doubts as to final success, which may have arisen on this head, so far as is practicable at this early day.

From my first knowledge of this new plant, I regarded it as one which might prove a most valuable acquisition to our country and climate, throughout the greater part, if not its whole extent, from South to North. For in addition to the fact, that the leaves appear to be preferred by the insects to all others, and the great reduction of labor in gathering the leaves from their extraordinary size, the promptitude with which they are renewed will enable us, by the introduction of this plant, to raise two successive crops of silk in a single season; the soil, the cultivation, the habitations for the successive generations of insects being yet the same—all thus converted to a double use and profit.

Considering the plant as new and highly valuable, and till I introduced them in 1851 as yet untried, I endeavored to multiply them by every possible means, leaving little or nothing to the chances of winter: I forbore risking even a partial loss with the yet young and tender plants of but a single summer's growth. With this view a new plantation, and much more extensive than that of the year preceding, is annually formed, the plants being set so close that by autumn the whole ground shall become occupied with a luxuriant growth of the young plants.

Before winter sets in the whole ground is cleared, and these, together with all seedling *plums*, *cherries*, *quinces*, and *white mulberries*, &c. are carefully and compactly placed in cellars, their roots buried in soils; or occasionally, the latter for protection, are laid in out of doors compactly, and in a slanting position, their bodies, being in part protected by soil. For all of the last named species are liable either to be killed down occasionally to the root by the first winter, or to be utterly destroyed by being thrown out by the frost.—Yet in the second winter it is far otherwise; their roots becoming strong and firmly established, the well ripened wood of the second year, and the wood of two years growth, becomes indestructible by any but very extraordinary winters.

The first winter I had opportunity of trying the experiment, was in the most destructive winter of 1851-2, a winter which destroyed so many trees, hitherto deemed hardy, even to the root. My stock of the *Morus Multicaulis* being at that time small, I risked only the experiment of a single one, and that a tender tree, it being only of the growth of the preceding summer. This I left out in a deep, black, and moist soil, in a northerly and most exposed situation. The young roots only were protected by a few inches of litter, whilst the top which was wholly exposed, escaped the destruction, except only the ends of the tender twigs. Last winter, I left out a very few of those of but a single year's growth, which were partially exposed. And although I have never lost a

single *Morus Multicaulis* by winter, I cannot yet from my own experience alone, speak so decisively at this time as I trust I shall be enabled to do at no very distant day. I have left during the present winter, a few plants of but a single summer's growth, without any kind of protection whatever, and intend another winter to make trial of them on a more extensive scale.

At the Messrs. Prince's, on Long Island, we are informed, they sustained the rigors of this same winter of 1851-2 unimpaired. And Madame Parmentier has assured us that all her *Morus Multicaulis* had sustained the rigors of the last seven winters on Long Island, unimpaired and unprotected. During the last summer, I saw at Capt. Chandler's, in Lexington, and in an exposed situation, young plants in a state of the most vigorous vegetation, which had endured unprotected the severity of the winter of 1851-2.

I have indeed sanguine expectations that the *Morus Multicaulis* may prove as hardy in our northern climate as the Peach which was originally from Persia, and the Cherry, when once their roots have become established. Its vegetation is rapid and luxuriant, and prolonged to a later period in autumn than most other trees, or till the tender and yet vegetating tips of the twigs are checked by frost. The ravages of the destructive winter of 1851-2 seem to have been principally confined to particular soils. The trees on the dry soils of certain plains and moist low grounds, appear to have suffered very considerably more than on the exposed hills. Even full grown and hardy trees of the Peach, the Pear, and the Apple were, in certain situations, unable to resist the effects of a winter so uncommon and extraordinary.

There is one particular in the statement of Judge Buel, which must not escape our notice. We have no reason to infer from his statement as above quoted, that the *Morus Multicaulis* is not equally as hardy as the *White Mulberry*; since the stock and root of the common *White Mulberry* on which the *Morus Multicaulis* must have been budded, was killed too—a stock and root of three years of age, which we know to be hardy.

In the case above referred to, we must look to other causes than the severity of winter—to some peculiarity of situation or soil. We are justified in this conclusion by a previous communication of the same distinguished philanthropist, wherein he has informed us of a more extensive destruction of other trees, which are deemed equally as hardy as the common *White Mulberry*. The following are his words: "The past winter has been dreadful to our Cherries, Plums and Pears. We probably lost five thousand trees in our nursery alone." * * * See the "Extract of a letter from Judge Buel to a gentleman in this vicinity."—New England Farmer for August 7, 1829; vol. viii. No. 3, p. 23. From your friend and most obedient servant,

WILLIAM KENRICK.

N. B. Since the above was written, I have received a letter, in answer to one I had written, from J. H. Cobb, Esq., of Dedham, containing some other particulars than those which are inserted in the last edition of 1853 of his valuable "Manual on the Mulberry tree and the Culture of Silk." The following are extracts from his letter, dated Jan. 4, 1854.

"Dear Sir,—I received yours of the 2d inst., requesting me to relate my experience as to the hardiness of the new species of mulberry tree, *Morus Multicaulis*: I can hardly say I have had a fair trial of it as yet. Such is the demand for the cuttings, that I have been obliged to cut mine down mostly. I have left several exposed this winter in order to try a further experiment. I have no doubt that they will succeed in our northern climate, but for the first two or three years they may require protection; after that they will not need it. The tips will always be lost, as you know they always are of the common *White Mulberry*, when young; but that we shall be able to rear it here is decided beyond a question.

"Yours, respectfully, &c. J. H. Cobb."

(From the Southern Agriculturist.)

ON THE RAISING OF SILKWORMS IN THE SOUTHERN STATES.

Columbia, Dec. 2, 1853.

MR. EDITOR,—I see in your interesting publication (the last November number,) several queries from a writer in Athens, Georgia, on the subject of silkworms. In reply, I beg leave to remark that, having undertaken to raise a crop of them, and gone to the expense of building a house which was lathed and plastered, made rat-proof, sashed, and every necessary precaution used to prevent the attacks of insects, and vermin, and damp weather, &c. I failed from one circumstance alone, which seems to me, will ever prevent success in our climate, unless artificial means are used to remedy the defects, which is simply this: our mulberry trees put out very early in the spring, and the silkworm eggs are equally precocious. We generally have a frost in April, very often severe enough to kill, totally, the mulberry leaf. The worm is then left to perish for the want of food. Any other kind of food seems rather protracting a diseased existence, which terminates in a poor crop of silk, for as much and more trouble, than is required if the worm's natural food was abundant. The only remedy for this evil is to have an ice-house, where the eggs can be kept until late in April, when all apprehension of frost is over, and then expose them to the heat of the atmosphere, which will soon hatch them. I am satisfied that could this plan be generally adopted, silk would be more often raised by small capitalists, in preference to cotton, and the poorer the family, the more advantageous the employment. Mulberry trees will grow in any soil, and almost any climate, from transplanting, or cuttings, or from the seed. The native black mulberry is equally as good as the foreign. The growth of the worms requires only abundance of food, a clean and moderately warm house. Children and invalids would not be exposed to weather. Many who are now objects of charity could be profitably employed, particularly women, whose in-door occupation makes the attention, the worms require, better adapted to that sex than exposure to outdoor labor.

I refer your correspondent to a very plain, sensible, and practical statement made in your Southern Agriculturist, vol. iv. p. 113, by Dr. James Davis, of Columbia, South Carolina; from this paper he will obtain an account more suitable to his inquiries than any communication I have yet read on the subject.

Respectfully,

AN EXOTIC.

RURAL ECONOMY.

(From the Northampton Courier.)

STUMP EXTRACTORS.

The Genesee Farmer, a few weeks since, made inquiries about the operation of Stump Extractors, and wished for information respecting them. A correspondent who has seen them in operation, furnishes us with the following particulars:—

"The common method and that with which I have been longest acquainted, consists in a perpendicular lever from 18 to 24 feet long, (according to the size of the stump to be removed.) One end of the lever is made fast to a large root of the stump as near as possible to the trunk; the highest part of the stump is next fastened to the lever at a point which becomes the fulcrum. The power is then applied by a long and heavy chain to the end which is in the air, and thus the stump is easily torn from the earth. Two yoke of oxen will remove a stump of the common or middling size without difficulty; but the earth must be previously removed from around the stump, and some or all of the roots must be cut away with the axe.

"Another and better method is the *Horizontal lever*, one end of which is fastened to a root of the stump and to its trunk, (others say to a neighboring stump

where there are many in a field) the power is then applied to the remote end of the lever, and the stump at the opposite end, or the stump which is used as a fulcrum, must give way, more commonly the former. A small wheel is advantageously placed under the end where the power is applied; causing it to run over the ground more easily than otherwise. By this method two yoke of oxen and three men may easily remove about 40 stumps in a day, if they are of hard wood, and somewhat old, (in which case little or no digging will be necessary,) or perhaps 20 green stumps of hemlock, pines, &c.

"The last and best stump machine I have seen or heard of consists in a *wheel and axle*. A large but simple frame is supported by two upright posts within the frame, and upon the uprights an axle is made to revolve by a wooden wheel of some ten or twelve feet circumference, with a strong chain passing around its periphery. Two yoke of oxen will turn the wheel, and thus another chain fastened to the axle and to the stump under the machine is wound around the axle until the stump is torn from the earth. The machine though light is somewhat unwieldy; but the difficulty of transporting it from one stump to another might be removed by affixing wheels to it, and this would in no wise interfere with the operation of the machine. It is difficult to say how many stumps might be pulled in a day in this manner, for such computation would be influenced by a variety of circumstances, such as the character and size of the stumps, the nature of the soil, &c. but many hundred acres of the New England territory have been cleared by this machine at the rate of ten dollars the acre; and in some instances large tracts of land which were once thickly wooded have been rendered stumpless for the small sum of eight dollars the acre, every stump exceeding six inches in diameter, being removed."

(From the New York Farmer.)

PUMPKIN BREAD.

As you have in some of your former numbers furnished us with directions for making rice bread, corn pudding, &c., I presume you will not take it amiss if I call the attention of your readers to the value of the *pumpkin*. I presume there is not a vegetable on the face of the earth more easily raised, or that is more productive, when it is considered that they will grow among corn, potatoes, or on any waste ground, and that the seed of one pumpkin will produce cartloads of fruit.

In the fall of 1829 I obtained the seed of a very superior pumpkin, part of which I planted the latter of June following, on the ground that I had raised two early crops of vegetables from, and comparatively of little value to me at that season of the year. I began to gather some of the fruit in October; it being extraordinarily fine. I was anxious to save every grain of the seed, but the difficulty was how to dispose of the flesh, or fruit. The common method of making it up into pies, would have been troublesome and expensive, and I thought them too good to feed swine with. I first gave some to my friends, on condition they would save the seed, but they did not use them up fast enough; at length my wife tried experiments to work them up into bread, cakes, pies, puddings, &c. and it was not long before we discovered that they could be used so as to answer every purpose of Indian meal, and that our family and friends considered it preferable to any thing of the kind made in the ordinary way.

The pumpkin is first deprived of the rind, and afterwards cut up in slices and boiled; when soft enough it is strained in a colander, and mashed up very fine; in this state it may be used up into pies, or mixed with flour for pudding, cake, &c. If it be intended for bread, it may be made up with wheaten flour in the proportion of one-third to half. The sponge must be first set in the ordinary way with yeast in the flour, and the pumpkin worked in as it begins to rise. My

wife's rule is to use as much pumpkin as will bring the dough to a proper degree of stiffness without water. Care should be taken that the pumpkin is not too hot to scald the leaven. It requires more baking than bread made entirely of wheat. I am aware that pumpkin bread is nothing new, but I am informed that farmers in the country use Indian meal with their pumpkin instead of wheaten flour, which makes it more like pudding than bread. Those farmers that are in the habit of making their bread with wheat and Indian, may find a market for their meal more easily than for pumpkins, and if they use these up into bread precisely in the same manner as they do their meal, I am persuaded they will find it very wholesome and palatable bread.

Yours, respectfully, T. BRIDGEMAN.
New York, Nov. 31, 1833.

(From the Southern Agriculturist.)

CURE FOR THE FISTULA.

Hancock County, (Geo.) July 20, 1833.

Dear Sir,—This is a name given to large tumors, which make their appearance on or about the withers of the horse; and are in all cases probably produced by a bruise—such as a violent blow, continued pressure or friction of illy adjusted harness, the bite of another horse, &c. Mason, in his book on Farriery, speaks of the malady as incurable, and advises the owners of horses thus diseased to dispose of them on any terms. This opinion of Dr. Mason is now, however, known to be idle; and that fistula is quite as curable as pole-evil, or any other disease.

A new article in the *Materia Medica* of the country was lately recommended to me, which on trial, I found to be a certain and speedy cure for fistula, or *festelo*, as it is sometimes called. Having tried rowelling, Mason's prescription, and several other things, without effect, a neighboring planter assured me that the disease could be cured in three or four days, by first passing a red-hot spindle under the skin that covered the upper part of the tumor, and applying to it in the form of a plaister, the carcase of a *toad frog*. Though the operations were clumsily performed, they were entirely successful; nothing more being needed to complete the animal's restoration to health, than to heal the sores occasioned by the spindle, and the vesicatory action of the frog's carcase—I say *vesicatory* action; for I presume it to be of that character, though no blister was visible when the carcase was removed. The hair covered by the carcase about ten hours, all came off, leaving the skin inflamed and sore for several days.

The hot spindle was applied by seizing that part of the mane which grows on or above the withers, pulling it up and thrusting the instrument through between the roots of the mane and the tendons of the neck, where it joins the shoulders. It has the double effect of cauterizing, and seton, or rowel, for the discharge of matter occasioned by the burning. The frog was split open alive, and applied, intestine and all, to the tumor, being afterwards well secured to the place by a bandage.

It is said, on good authority, that a whitlow, or bone-f flow [felon?] on the finger is cured immediately, by thrusting the diseased finger into the throat of a frog; and it is equally efficacious as a remedy for a *stone bruise*; which, in the stony regions of the upper country, is well known as an exceedingly painful, and sometimes fatal swelling on the heel or other parts of the sole of the human foot.

Whether the toad, one of the most ill-flavored and (as generally supposed) useless parts of creation, may hereafter be found an important article in the curative art, I will not predict; but the potency with which its carcase certainly does act on the skin and flesh of a horse, entitles it to attention. If you think the notice taken of it here is entitled to a place in your repository, in the writer's own words, or your own, please use it. In every application of the toad

as a remedy, that I have heard of, the animal was alive, or nearly so as possible, when the process commenced.

A HIGHLANDER.

We regret that we are not at liberty to give the name of our correspondent, as it would enhance the value of the communication. We can, however, assure our readers, that he is a gentleman highly distinguished, and whom every reliance may be placed on the information given.—*Ed. So. Agr.*

MISCELLANEOUS.

(From the Wilkesbarre Gazette.)

OWE NO MAN.

Pray take my advice, if a fortune you'd get,
Pay off what you owe, and then keep out of debt.

This may be bad poetry, but depend upon it, it is excellent sense. It is an old saying, that the debtor is a slave to the creditor. If so, half the world enter into voluntary servitude. The universal rage to buy on credit, is a serious evil in this country. Many a married man is ruined by it.

There was Titus Thornbury, who was an industrious man. He had got as good a farm as lay in the north parish of Applebury. But unfortunately he gave way to the prevailing fashion of getting in debt, and a bad life he led of it.

At thirty, he owed £2,000. His farm yielded about that sum. He could not live without purchasing some things, and as all the money he could raise went to pay principal and interest on his debt, he had every thing to buy on credit. So at the year's end, with interest and cost, and no loss of time, and extra charge for things because he did not make ready pay, he was just as deeply involved as the year before. Thus embarrassed, dunned and dunned, was poor Thornbury for twenty years.

Not so with his cousin, Ned Foster. He vowed he'd owe no man. The produce of his farm was about the same as that of Thornbury's but as he was not forced by duns or executions to sell it out of season, he got the highest price; as he paid for things when he got them, he had them two per cent. cheaper—as he paid neither interest nor cost, and lost no time in running to borrow money or see his creditors he laid up £90 a year, and lived quite as well as his cousin, and infinitely happier.

When poor Thornbury saw a man riding up the road, his anxious looks told him as plainly as it could tell, "plague on that fellow, he has come to dun." When a sudden rap at the door announced a visitor, no matter how lately he had been dunned, he turned pale and looked sorrowfully anxious, until the visitor was known.

Many a man goes into the store for a single article. Looking around, twenty things strike his eye; he has no money, buys on credit. Foolish man! Pay day must come, and ten chances to one like death, it finds you unprepared to meet it. Tell me, ye who have experienced it, did the pleasure of possessing the article, bear any proportion to the pain of being called on to pay for it when you had it not in your power.

Good people, hark ye: A few rules, well kept, will contribute much to your happiness and independence, viz:

1. Never buy any thing which you do not really want.

2. Never buy on credit when you can possibly do without.

3. Take pride in being able to say, "I owe no man."

Wives are sometimes thoughtless, daughters now and then extravagant. Many a time when neither the wife nor the daughter would willingly give a single pang to the fond father's bosom, they argue and tease him to get articles, pleasant enough to be sure to possess, but difficult for him to buy; he purchases on credit, dunned—sued; and many an hour made

wretched by their folly and imprudence. Old Robert presents his compliments to the ladies, and begs they would have the goodness to read the last eight lines once a week till they get them by heart, and then act as their own excellent dispositions will direct.

Above all things, good people, never go in debt to a tavern. To grog, to toddy, to sling, to bitters! Oh, horrid! what a bill! Never owe your shoemaker, your tailor, your printer, your blacksmith, or laborer.— Besides the bad policy of keeping in debt, it is downright injustice to those whose labor you have received all the benefits of.

How happy the farmer who owes not a pound,
But lays up his filty, each year that comes round;
He fears neither constable, sheriff, nor dun,
To Bank or to Justice has never to run.
His cellar well fill'd, and his pantry well stor'd,
He lives far more blest than a prince or a lord;
Then take my advice, if a fortune you'd get,
Pay off what you owe and keep out of debt.

Why are certain small fowls called 'bantams'?
Because they were first introduced here from Bantam in the Isle of Java.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ————Rappahannock, 3.00 a 4.90.—Kentucky, 4.50 a 8.90. The inspections of the week comprise 7 hhds. Maryland; and 14 hhds. Ohio—total 21 hhds.

FLOUR.—Best white wheat family, 6.50 a 7.00; 2d. quality, 6.00 a 6.50; super Howard street, 5.00 a —; (wagon price, 4.87½ a 5.00); city mills, 5.00 a —; city mills, extra, 5.12½ a —.—**CORN MEAL**, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—**GRAIN**, red wheat, 90 a 1.00; white do 1 15 a 1.20.—**CORN**, yellow, 55 a 56; white, 54 a 55; in the ear, — a — per bbl.; Rye, 65 a 66; chop rye, per 100 lbs. 1.50 a —.—**OATS**, 35 a 36.—**BEANS**, 1.50 a —.—**PEAS**, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—**CLOVERSEED**, 4.50 a 5.00; **TIMOTHY**, 2.50 a 3.00.—**ORCHARD GRASS**, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—**Lucerne** 37½ a —.—**BLU-BARLEY**, — a —.—**FLAXSEED**, 1.62½ a 1.70.—**COTTON**, Va. 11 a 12; Lou. 13 a 14; Alab. 12½ a 13½; Tenn. 11 a 12; Upland 11½ a 13.—**WHISKEY**, hhd., 1st p. 24 a 25; in bbls. 23 a —.—**WOOL**, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—**Unwashed**, Prime or Saxony Fleece, 50 a 55; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—**HEMP**, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—**FEATHERS**, 37 a 39; **Plaster Paris**, per ton, 3.75 a —; ground, 1.37½ a — bbl.—**Iron**, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Ss., per ton, 15.00 a 15.50.—**Prime Beef** on the hoof, 6.00 a 7.50.—**Oak wood**, 4.50 a —; Hickory, 6.00 a —; Pine, 3.50 a —.

From the Baltimore American, January 21.

FLOUR.—Sales of several hundred bbls Howard street Flour from stores yesterday at \$5 per bbl. cash. Parcels may be had to-day for cash, at the same price. Sales by the dray load at \$5.12½ a \$5.25. The wagon price is unsettled, and the tendency is now upwards. Some of the dealers continue to pay but \$1.75, while others are paying \$1.87½ and \$5. A portion of the receipts continues to go into store on account of the country owners.

A sale of 700 bbls. City Mills at \$5, full, and sales of other parcels at the same price, with and without interest added.

GRAIN.—There is nothing doing in Wheat, Corn, Rye or Oats.

The wagon price of good Cloverseed is \$1.50.

PORK.—Corn fed at \$5.25 a \$5.37½ from wagons, and at \$5.50 a \$5.75 from stores.

FRESH GARDEN SEEDS—NEW STOCK.

The subscriber has now completed the gathering together, from various sources, of a very extensive and complete assortment of GARDEN SEEDS, which he ventures to recommend to his customers and the public as good in every respect. He is prepared to execute orders either for dealers or families at the most reasonable rates at which first rate articles can be obtained.

AGENCY.—He also acts as agent for the procurement of CLOVERSEED and various GRASS SEEDS whenever he has them not in store; also Agricultural IMPLEMENTS, Fruit and Ornamental TREES, SHRUBS, GRAPEVINES, &c. Orders for these ought to be sent immediately, accompanied by either cash, or directions to draw for it when the articles are shipped. He also attends to the purchase and sale of CATTLE and other domestic animals.

I. I. HITCHCOCK,
American Farmer Establishment.

LINNEAN BOTANIC GARDEN AND NURSERIES. Flushing, near New York.



WILLIAM PRINCE & SONS, having devoted a portion of their grounds to testing the qualities of the finest Esculent Vegetables of foreign countries, as well as those of our own, now offer to venders and others a most extensive assortment of the choicest seeds, possessing the advantage of being raised under their own inspection, or of being imported from their confidential friends, and tested to their satisfaction. The principal object is to supply venders with wholesale quantities, but they cannot refuse to furnish their correspondents with smaller parcels for family gardens, &c. The prices are very moderate, (particularly for quantities) it being the desire to render this branch of business profitable by its great extent, and not by enhanced prices. By reference to the catalogue it will be seen that it comprises a great number of new and choice varieties never before offered to the public; it being the intention to enrich this department with the same zeal that has been devoted to others. They have also imported the finest agricultural seeds known in Europe. The following form a part of the present stock of seeds.

2500 lbs. Cabbages, comprising all the varieties.
2000 lbs. Turnips, do including 800 lbs.
Ruta Baga, and other Field Turnips.
1000 lbs. Radishes do
800 lbs. Onions do
800 lbs. Beets do including 300 lbs. mangold wurzel.
600 lbs. Carrots, do including 200 lbs. large field Carrot.
300 lbs. Cucumber do
150 lbs. Lettuces do
100 lbs. large German Asparagus.
50 bushels Pacey's perennial Ryegrass, very celebrated.
20 do Lawn Grass.
25 do English Potato Oats, weighing 44 lbs. per bushel.
20 do Early Angus Oats, the finest known in Europe.
20 do Hopeton do }
100 do Orchard Grass.
1000 lbs. White Dutch Cloverseed
1000 lbs. Provence Luzerne, the finest kind known.
150 lbs. Trifolium incarnatum.
100 bushels Canary seed, superior quality.
30 do White Mustard.
6 do Taylor's forty-fold Potatoes, which is now taking precedence in England, and proportionate quantities of all other kinds of seeds. Priced catalogues will be forwarded to every applicant, and to venders and those who desire to enter into the business, every information will be given relative to retailing, &c.—The articles will be packed in a superior manner, and forwarded with the utmost despatch.

Packages for Ohio, and the other Western States, can be sent during winter by way of Baltimore or Philadelphia by the transportation line.
January 17, 1834.

ORCHARD GRASS.

Is scarce and high. Those who have any to dispose of, can now get a good price for it. Address

I. I. HITCHCOCK,
Amer. Farmer Establishment.

AGRICULTURAL IMPLEMENTS.

J. S. EASTMAN, would inform the public that he is prepared to supply his customers with Messrs. Fox and Borland's Spring Concave THRESHING MACHINE, which has been fully tested this season, by Col. Edward Lloyd and several other gentlemen, who give it the decided preference to any other Threshing Machine they have ever seen. I can furnish a number of these Threshing Machines, now ready for delivery separate from the horse powers.

I have also in store, a good assortment and supply of PLOUGHS, from a small six inch seed Plough, to the largest size three horse Plough, of cast and wrought shares, and which I will warrant to be equal to any ploughs in use.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chesnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

CONTENTS OF THIS NUMBER.

Extract from the Preface to the Life of Grant Thorburn—Agricultural Enterprise—Large Oats—Large crop of Ruta Baga—Scraps—Cultivation of the Sugar Cane, continued; Chemical History of Cane Juice—Soiling, its Origin and Advantages—On the Improved Breeds of Domestic Animals—Changes which take place in the Domestic Animals of Europe, when transported to America—Importance of selecting the best breeds of Live Stock, particularly of Swine—Mexican Piggeries—Management of Swine at the South—*Morus Multicaulis*, Chinese Mulberry, considered as a Hardy Tree—On the Raising of Silkworms in the Southern States—Stump Extractors—To make Pumpkin Bread—Owe no Man—Prices Current of Country Produce in the Baltimore Market—Advertisements.

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1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, JAN. 31, 1834.

QUALITY OF MILK.—In an agricultural address, recently delivered in Massachusetts, the speaker, while on the subject of dairies, observes—

"In a former publication, I have stated a fact coming under my own observation, that in an experiment of milk taken at the same time and placed in the same situation, and where the cows were fed in the same manner, the milk of one cow yielded at the rate of one inch and three-tenths of an inch of cream upon nine inches of milk, and that of another cow in same yard produced only two-tenths—in the quality of the milk of the two cows for the purpose of making butter, the difference then was 13 to 2."

The quality of the milk of different cows is too little attended to by dairymen generally. The common standard for judging of the value of a milch cow is the number of gallons she will give per day. However well this may be for a mere milk merchant, it is not the true standard for a farmer or stock-breeder. For him, a more correct rule is the quantity of milk, or butter, or cheese, that can be obtained from a cow on a given quantity of feed. To be sure, the size, the form, the color of cattle; their aptitude to fatten, and the quality of their beef, are important considerations with the breeder of stock, in reference to the purpose for which he designs his animals; but we believe the above is the correct rule for judging a milch cow. Now if we were asked, (as we often are,) what breed or kind of cows we think will yield the greatest quantity of cream from a given quantity of common pasture, or an equal cost of other food, we would say, without pretending to know, we opine that the North Devons will do it.

Another new steamboat has been projected by Mr. Barnabas Langdon, of West Troy, which is said to combine every advantage of Mr. Burden's, and some which that invention did not possess. The model is for a double boat—each hull three hundred feet long, and twelve feet beam, and corresponding in shape and mould almost precisely to the Indian bark canoe. Beams pass across both boats, to secure them firmly, and at the same time form a deck the whole extent

ELEGANT EXTRACT.—"If the time shall ever come when this mighty fabric shall totter; when the beacon of joy that now rises in a pillar of fire, a sign and wonder of the world, shall wax dim, the cause will be found in the ignorance of the people. If our union is still to continue to cheer the hopes and animate the effort of the oppressed of every nation; if our fields are to be untrod by the hirelings of despotism; if long days of blessedness are to attend our country in her career of glory; if you would have the sun continue to shed his unclouded rays upon the face of freemen, then EDUCATE ALL THE CHILDREN IN THE LAND. This alone startles the tyrant in his dreams of power, and rouses the slumbering energies of an oppressed people. It is intelligence that reared up the majestic columns of national glory; and this alone can prevent them crumbling to ashes."

SCUPPERNON.—Of this grape there are two varieties, the black and the white; both possessing similar qualities. The young wood is very slender, the leaves shining above and beneath. The fruit very juicy and sweet. Wine is made of this grape, of an excellent and very peculiar flavor. Much wine is said to be made of this grape in North Carolina. Many barrels are made in a single season from a single vine. They are trained on arbors over the large court, which usually separates the main houses in that country from the kitchen, which is in the rear;

and a single vine will soon cover a space of hundred feet by forty. The climate of New England is not so well suited to this vine. Accounts have been stated [see New England Farmer] of single vines which would produce forty bushels in Carolina.—They are said to flourish, and their roots will find nourishment in sandy land, good for nothing else.

[New American Orchardist.

The Richmond Compiler states that deposits of Anthracite Coal have been discovered in Rockingham county, Virginia.

[We propose that these "deposits" be removed forthwith.]

(From the Northern Farmer.)

BLACK SEA WHEAT.

In the second number of the current volume of the Northern Farmer, we published a communication from Payson Williams, Esq., of Fitchburg, Mass., to the Fitchburg Gazette; in which he gave an interesting account of this new kind of wheat, the product of which, the past season, was estimated by the reapers, to exceed forty bushels to the acre. We have since learned from an article in the New England Farmer, that the wheat grown upon this single acre, measured fifty-five bushels and three pecks.

In consequence of a communication by us to Mr. Williams, we have received from him, some additional particulars in relation to his crop of wheat; the mode of culture pursued by him; the previous preparation of the ground; the nature of the soil, and the original forest-growth of the land on which the crop was grown. His communication on this subject will be found subjoined.

Fitchburg, Mass. Dec. 23, 1833.

To Messrs. H. & C. H. E. Newton:

Gentlemen,—The wheat mentioned by you, as grown by me the past season, I not only consider as a remarkable crop in quantity, 55½ bushels, (it being spring wheat,) but very excellent in quality. Its history, so far as I am able, shall be given. Three years since my brother, Capt. Stephen Williams, brought me one bushel from Smyrna, which he obtained, as he informed me, from a ship, while discharging a cargo of that kind of grain from the abundant shores of the Black Sea; hence its name. Observing by the map that we were in about the same latitude, I made trial the first season of but one peck; (not being certain that it was spring wheat.) The product was large in straw; but owing to our unpropitious storms and bad weather for a wheat crop, the kernel was not so fair as the original. Nothing discouraged, however, I sowed from this product, rather than the original; the product from which more than answered my expectation. From this last product, I sowed, the 19th of last April, 24 bushels on one acre of land, which had potatoes grown on it the previous year, (crop 613½ bushels.) This field, immediately previous to sowing, had been ploughed deep and fine. After the grain was harrowed in across the furrows, the field was rolled in, and left from that time to putting in the sickle. I would here observe, however, that my usual custom has been to sow on about twenty bushels of good unleached wood ashes to the acre, so soon as the wheat plants are two inches in height, and in a damp morning, if such can be had. The value of such dressing I have considered to consist, 1st. in the caustic quality of the ashes, as it is a preventive to the ravages of the white maggot, which sometimes preys at the root of the young plants; 2d. considered as a manure or top dressing, it no doubt contributes to the earlier perfecting the kernel or berry, and at the same time to a more vigorous growth of the straw.

The seed was prepared as usual, by stirring into the heap thick whitewash made from quick lime, until every kernel received a coat of the same; say one

quart of unslaked lime to each bushel of wheat. I prefer lime to ley made from wood ashes, [only] on account of its whiteness, thereby rendering it easier to throw the seed (broadcast) more evenly on the field.

The character of the soil is a deep loam, intermixed with cobble stones. Its natural forest growth had been oak, (white and red,) beech, rock maple, chestnut and hemlock.

The character of the wheat appears to differ from our usual kinds by the straw being much taller, (some of which was five feet ten inches in height;) and although it is what we call bearded, and the heads of two varieties, similar in appearance to our common red and white, yet there is a variety, (say a sixth part perhaps,) which notwithstanding the head is short, yet the kernels are so closely set that I have repeatedly counted over eighty kernels from one ear or head. This variety I call the pearl, from its clear appearance. The kernel throughout the crop was very plump and large. The straw stout, as well as tall; bearing the beating of our New England storms better than any I have heretofore grown. I have not the least doubt but it will succeed well where other varieties have prospered; and have no hesitation in believing it will be a valuable acquisition, for many years to come, to the agricultural interests of our country; which, aside from selfish considerations, I most heartily reciprocate your views in wishing to advance, believing this to be the chief corner-stone of our happy republic.

In the meantime, if this contains any thing which you may think will subserve the interests of agriculture, you are at liberty to publish the same.

Yours ob't serv't, PAYSON WILLIAMS.

A SENSIBLE HORSE.

We do not think the records of instinct ever contained a more extraordinary instance than that we are now about to relate, and for the truth whereof we pledge ourselves. A few days since, Mr. J. Lane, of Fawcett, in Gloucestershire, on his return home, turned his horse into a field in which it had been accustomed to graze. A few days before this, he had been shod all fours, but unluckily had been pinched in the shoeing of one foot. In the morning, Mr. Lane missed the horse, and caused an active search to be made in the vicinity, when the following singular circumstances transpired. The animal as it may be supposed, feeling lame, made his way out of the field, by unhanging the gate with his mouth, and went straight to the same farrier's shop, a distance of a mile and a half. The farrier had no sooner opened his shed, than the horse, which had evidently been standing there some time, advanced to the forge and held up the ailing foot. The farrier instantly began to examine the hoof, discovered the injury, took off the shoe, and replaced it more carefully, on which the horse immediately turned about, and set off at a merry pace for his well known pasture. Whilst Mr. Lane's servants were on the search, they chanced to pass by the forge, and on mentioning their supposed loss, the farrier replied, "oh, he has been here, and shod, and gone home again," which, on their returning, they found to be actually the case.—N. Y. Star.

SUBSTITUTE FOR SWEET POTATOES.—The cocoanut squash, cut into pieces, and roasted like sweet potatoes, is found to be fully equal to them, and so closely to resemble them in flavor that it would be difficult to distinguish between them. It grows freely in this climate, and may be kept till mid winter.

[Goodsell's Farmer.

ORIGIN OF TARIFF.—The first list of articles subject to duty was drawn up at Tariffa, an old Moorish town, and hence the word Tariff became applied to all subsequent lists of a similar nature.

[Dekay's Sketches of Turkey

AGRICULTURE.

(From the Maine Farmer.)

EXTRACTS

From a Report of the Trustees of the Kennebec County Agricultural Society, at the semi-annual meeting, August 28, 1833.

Gentlemen of the Ken. Co. Ag. Society:

Your trustees are rejoiced by the return of your semi-annual meeting, of their duty to present their report. You probably expect it, and we would gladly answer your reasonable expectations, but we are so frequently called upon to perform this duty, that you must not be surprised to find that most of the subjects brought before you at this time, have been alluded to in our former reports.

They cannot, therefore, have the charm of novelty, and we may not be able to cast upon them any new light; but believing as we do, that the prosperity of our state depends mainly upon her success in agriculture and the mechanic arts, we again call your attention to some of the subjects connected with these interests, offering as an apology for discussing some of the same topics embraced in our former reports, their importance to the best interests of the community.

Agriculture and the mechanic arts are now the dependence of a great proportion, and must ultimately be of almost the whole population of Maine. To them we must look for the sources of our wealth, and if they fail we must inevitably be poor. But there is no need of failure; information and exertion will insure success. Cheered by the prospect before us, in view of the spirit of inquiry that is abroad, and the liberal aid afforded by our legislature to agricultural societies, we look forward to the time when we shall liberate ourselves from that servile dependence on our mother and sister states which has too long degraded us.

By affording suitable encouragement to mechanics—inducing them to settle and conduct their business within our borders, our implements of husbandry and all the articles necessary for our use, may as well be manufactured among us as elsewhere; and by gaining and diffusing information on *practical agriculture*, the capabilities of our soil are sufficient to furnish our own bread, thereby wiping away the reproach that has hitherto attached to us, increasing the wealth of our state, and securing her independence.

Confident of the correctness of this position, if we, as members of this society, or in any other capacity, can in any degree be instrumental in extending valuable information, and effecting these results, we shall feel that we have performed a part in the best of causes, and shall receive a sufficient reward in the approbation of our own consciences.

We have before deprecated selling our young stock before they arrive at maturity, at a loss in the expense of rearing, and we renewedly enter our protest against the practice.

It is an admitted fact, that manual labor is the employment most conducive to the happiness, and at the same time most congenial to the health of man. Still there is a fault in the habits of our laboring men to which we invite your attention. That to which we allude may not be general, but that it prevails in a degree is certain. It is the habit of laboring violently for a time, until a piece of work is finished, or nearly so, and then relaxing their exertions to recover from the fatigue, and perhaps sickness, occasioned by this imprudent course of conduct. This is ruinous to health and almost fatal to business. Regular, constant labor, without violent exertion, is most profitable, not only because more is accomplished, but because it is done in a better manner. It is the best preservative from diseases, and a certain cure for that worst

of all diseases, *laziness*. The man who labors regularly every day, almost invariably enjoys good health. He is not troubled with indigestion, more fashionably called *dyspepsia*, and the many nameless complaints that afflict the occasional laborer, or him who does not labor at all. Let a lazy man once get in the habit of constant labor, and he will almost forget that he does not love it. There are many who say they are not able to work constantly, and no doubt they think so. No doubt there are many who really are not. But let us look at the habits of some of those feeble men. They are certain they cannot work every day as some of their neighbors do, for only a few days' work, as they work, merely through the planting or haying season, brings on a sickness from which they do not recover for weeks. They receive but little nourishment from their food, nor are they much refreshed by sleep; and who can doubt that they are sick? No one. Nor do we doubt, that if very many of these men were to reform their habits, their health would be improved, and instead of days of tedious labor and sleepless nights of pain, they might enjoy all the blessings of health attendant on regular constant employment.

The soil best adapted to the culture of wheat is said to contain 26-100 parts clay, with a lime rock subsoil, or that manure furnished by art in a suitable degree.

Much has of late been said upon shoal and deep ploughing, and it may not be amiss here to discuss that question, and thereby elicit information. We believe the nature of the soil and subsoil must determine the depth. A shoal soil, with a clay subsoil, will not admit of being ploughed deep. But any soil composed of loam or sand may, and probably ought to be ploughed much deeper than has been the practice of our farmers. For such sward-land, seven or eight inches are not too deep. The advantages are numerous. It will afford a better opportunity to cover long and unrotted manures, the fermentation of which beneath the sward must be of lasting benefit to the soil. It gives an opportunity to work above the sward with a smaller plough, harrow and hoe—is a greater saving of the manure of the sward, which has been estimated at 12 tons to the acre; and if the land is to be stocked down immediately to grass without hoeing, it can be done much sooner with the same smoothness by means of the harrow and roller; and a deeper and looser soil is created, much to the advantage of the succeeding crops, as the tendency of the manures ploughed in is to rise and go off by evaporation, and not as has been supposed, to soak downwards. There are some disadvantages in ploughing deep. More manure is required for a single crop. The crops will be later in arriving at maturity, which is a serious injury, in some instances, to Indian corn particularly; but an advantage to many other crops, and especially to wheat, as it will be longer in growing, of course, less likely to blast; and afford a better opportunity for harvesting, in connection with the farmers' other crops. And more strength of team is required to plough the same land. On the whole, we are decidedly of the opinion, that good policy requires us to plough deeper than has been the general custom of our farmers.

Having selected the soil, and ploughed the land, as has been described, at any time in autumn when it can be done most conveniently, the furrows should be rolled, and if it is a clover field it may be harrowed, and the wheat sowed in the spring without any dressing.

In this connection we will call your attention for a moment to a new mode of raising winter wheat that is pursued successfully in the state of Vermont. The ground is prepared in autumn in the manner already pointed out, and the seed is taken late in the season, when the cold weather has arrived, and after being swelled, is boxed up, placed where it will freeze, and thus kept till spring; when, as soon as the ground

will permit, it is sowed. The danger of winter killing is thus avoided, and we are told the crops of wheat are nearly doubled in the section where this course is pursued. The experiment is, at any rate, worth trying, and if it should prove successful, it may be the means of enabling us to increase very materially the amount of our crop.

If clover is sowed with the grain, pursuing the same course we were pointing out, it will yield two or three good crops of hay, and then the process should be repeated. Land that has been exhausted by mowing, "bound out," as it is termed, will require a top-dressing. This should be supplied without encroaching upon the barn manure—that is wanted for other crops, besides not being the best food for wheat. A compost, such as every farmer has the means of procuring with a trifling expense, will be found to answer every purpose. By collecting thistles and weeds from the sides of the road and fences—and here we urge you to declare a war of extermination against these nuisances, brakes, &c. from pastures, and throwing them into a heap while green, together with earth collected by washing into hollows, muck from a meadow, and a little time these ingredients being well mixed, will soon become fine and fit for use, and thus a valuable and sufficient top-dressing for several acres may be provided by every active, wary farmer.

Alkalies have been used as a manure in almost, and perhaps all, agricultural countries. In this state, leached ashes are sold as an article of merchandise, carried to the state of New York, where on Long Island they are worth from 20 to 33 cents per bushel, applied profitably in raising bread stuffs, which are brought from there to Maine and sold even to our farmers. And why may we not retain the ashes, and apply them to the same use ourselves, if they are of service? We are informed that they are applied at the rate of about four bushels to the acre as a top-dressing. If, as is believed, manure in rotting passes through nearly the same stages as vinous liquors in fermentation, there is one state in the process of decomposition which may perhaps be called the acid state; and may not that state of the manure or sward be the proper time to apply ashes or other alkalies as a top-dressing? We believe ashes may be used with advantage whenever the manure or sward contains an acid, and we have suggested these ideas that they may excite inquiry and elicit information on the use of ashes, and be instrumental in retaining them among us until a course of experiments have been tried to test their value. We are told that John Pitts, Esq. of Belgrade, is applying leached ashes to promote the raising of wheat on sward land, and we trust others will try the same experiment.

To adopt this mode of raising wheat, thereby supplying ourselves with bread, we have only to keep a larger team of growing steers or oxen. Here arises the inquiry, would it not be well to raise more oxen and less horses. We have the best market in the country for large oxen. They are sought with avidity from all parts of the state, and is it not an object to turn our attention more to that kind of stock? We have made a comparison between the expense of a yoke of oxen and a horse at a marketable age, and present it for inspection, hoping that the errors, if any, will be pointed out.

The comparison alluded to was, upon motion of one of the trustees, referred to a select committee of the society, who made this report, was accepted, and ordered to be embodied in the trustees' report when published.

Attest:
S. BENJAMIN, Rec. Sec'y.

RAISING A HORSE.

Use of stud	\$4 00
Use of mare	20 00
Keeping first winter	7 00
Insurance	1 00

\$32 00 at one year old.

2d year—summering	\$3 00
Wintering	7 00
Interest	1 92
Insurance	1 00
Tax	50
	45 42 at two years old.
3d year—summering	5 00
Wintering	11 00
Interest	2 71
Tax	75
Insurance	1 50
	66 38 at three years old.
4th year—summering	5 00
Wintering	15 00
Interest	3 98
Tax	1 00
Insurance	1 50
Shoeing once	1 50
	94 36 at four years old.
Labor equal to breaking.	

RAISING A YOKE OF OXEN.

Use of bull	\$2 00
Raising calves	10 00
1st wintering	12 00
Insurance	50
	24 50 at one year old.
2d year—Interest	1 49
Summering	4 00
Wintering	12 00
Tax	33
Insurance	50
	42 82 at two years old.
3d year—summering	7 00
Wintering	12 00
Interest	2 56
Insurance	75
	65 13 at three years old.
Price of oxen	50 00
Price of a horse	60,00
	20,00 difference.
Loss on the horse	34,36
Gain in the oxen,	14,87
	\$49 23 difference to raiser.

SAMUEL P. BENSON, }
 ELIJAH WOOD, } Trustees.
 NATHAN FOSTER, }

Winthrop, 1833.

(From Goodsell's Genesee Farmer.)

BROOM CORN—*Sorghum saccharatum*, L.

This plant is a native of India, and was introduced into this country about fifty years since.

Under the general name of sorghum, are arranged several species, most of which are cultivated for their farinaceous seeds, which have at different times, and by different nations, been used as bread stuffs, as the *S. vulgare*, or Indian millet, and *S. rubens*, which is sometimes called Egyptian wheat.

The *S. saccharatum*, or broom corn, is cultivated mostly for the sake of the long panicles, or seed stems, which are manufactured into brooms, and for which purpose we know of no plant that can be cultivated in this climate that would be equally as valuable.

For many years past, broom corn has been extensively cultivated as a field crop in New Jersey, Connecticut, Massachusetts, and some other parts of the United States, and has been made a very profitable branch of agriculture.

In order to render this a profitable crop, it should

be planted upon such soils, and in such climates as are found favorable for Indian corn. Wherever the gourd seed corn perfects itself, it is safe to calculate that broom corn will succeed.

Although the seeds of the broom corn may be ripened much further north than the larger kinds of Indian corn succeed to advantage, yet the panicles or brush will not be so long or valuable as that which is grown in a warmer climate.

The cultivation of broom corn does not differ materially from that of Indian corn, as it may be planted either in hills, or in drills, both of which are practised in the same districts, according to the option of the grower.

The produce of brush varies in different parts of the country, and in the same district in different seasons, but a fair crop may be put at from five to seven hundred pounds per acre.

Although the brush or panicle is the main object of cultivation, yet the seeds are turned to some account when large crops are grown. The quantity of seed produced per acre may be calculated at from twenty-five to thirty-five bushels, which is pronounced by some to be equal to the same quantity of oats for hogs or cattle.

The price of brush varies, in different seasons, from five to ten cents per pound. Allowing five hundred pounds as the produce of an acre, and seven cents per pound as price, the produce would be thirty-five dollars per acre. The seed is thought by many to be worth as much as the cost of cultivation.

From the universal use of corn brooms in this country, and also in Upper and Lower Canadas, where the climate is too cool for the cultivation of the plant, there is little danger of the market being overstocked, and farmers in suitable localities may with safety calculate on the crop as one that will at all times yield a fair remuneration for the cultivator.

There is some diversity of opinion with regard to the manner in which the seed should be allowed to ripen. Some allow the brush to remain upright until it is perfectly ripe; others bend the stalk below where it is to be cut, allowing the head to hang pendulous, by which the panicles are more apt to remain straight. We believe the more experienced growers only bend those heads that become crooked before they leave the sheath in which, while young, they were enveloped.

The stalks of broom corn which are left after the heads are cut off, should be cut and burned,* otherwise they will be found rather troublesome in after cultivation.

DOMESTIC ANIMALS.

(From the New York Farmer.)

ADAPTATION OF BREEDS OF LIVE STOCK IN THE UNITED STATES TO THE SOIL.

MR. EDITOR:

Sir,—In some parts of the United States much attention has been paid to the improvement of live stock, and in many instances with success; but in others the improvement aimed at has not been attained, because the varieties of soil and climate had not been duly considered. In looking over the large droves of cattle which are brought from the west every year in October and November, though you see a strange medley of all ages, sizes, and every variety of condition, yet you see the same general character; nineteen out of twenty are red and middle-horned, evidently of the same race as the Devons, Herefords, and Sussex cattle of England. In the droves of sheep, you may look at a hundred without seeing a good one, but amongst any twenty head of cattle, you can always

* We can hardly believe that it is the best way of disposing of them. Can they not be made serviceable to land by some process of manure-making?—*Ed. Am. Farmer.*

find some good; and what these are the whole might have been made, by selection and care. Good ones would cost no more to keep, if so much, and would always fat quicker, and be worth more money.

The great varieties of soil met with will require different kinds of cattle, yet on poor soils, as well as rich, most of our farmers aim more at size than symmetry, and handling is never thought of as an indication of grazing qualities.

It is much to be desired that the farmers of the west, where so many cattle are bred, would attend to the grazing qualities of the stock they rear; and it is surprising that no breeders have attempted to establish a variety merely as milkers. Good cows are to be found here and there, but you look in vain for any uniformity of character amongst them. A permanent variety might be raised in a few years, by useful management in always selecting the best milkers to be found, and putting a bull to them which comes of a good milker. This is a main point, and not easy to succeed in. A good dairy bull ought to be clean in the head and neck, and altogether of a more feminine appearance than a common bull.

In New England are many excellent cattle, all of the middle horned kind; by selection for several generations, some parts of that country have now a breed hardly to be surpassed, as uniting the three uses of cattle, that is, for beef, the yoke, and the dairy. Yet they have no kind bred for the dairy as the sole object. In the small territory of Great Britain are many varieties of soil, and many of cattle, say from 30 to 40, generally well suited for their places. At the head of all are the improved Shorthorns, an admirable breed, yet from their size, form, and constitution, they can only be kept in favorable situations. If grazed in summer on second rate lands, and kept on hay from the same lands in winter, they would rapidly degenerate; even artificial food would not make up for the want of quality in the grass and hay. Their early maturity would soon be lost with the wretched winter keeping so common here. In their native districts, with a moist, temperate climate, and rich soil, they are fed in the highest manner. Deep old grass land in summer, with abundant turnips and rich hay, in well littered, well sheltered yards during winter, keep them always up to the mark. On inferior lands they would hardly live, yet there Galloways would get fat; while in the Highlands of Scotland even Galloways could not live. Yet in that bleak country is found a breed of cattle perfectly adapted to their situation: small, compact, and hardy, beautiful to the eye of a grazier, and much better beef than the larger breeds of the south. Indeed, the richest lands do not produce beef or mutton of so good a quality as lands of inferior fertility, especially of their own rearing. In some fine parts of Scotland the improved Shorthorns have driven out the native breeds; but, on the whole, the Scotch cattle excel all others in their situations, and there are districts of this country, such as the northern slope of the Alleghenies, &c., where it is probable the Highlanders would answer well. A few Galloway cattle were several years since introduced by some Scotch settlers in Caledonia, Livingston county, New York, but have long been mixed, and are now said to be lost. West Highlanders, for bleak mountain lands, and Ayrshires for the dairy, would be a national acquisition. Look at the noble premiums given yearly by the Scotch Highland Society for the improvement of their domestic animals, and for the promotion of agriculture in every way. At their exhibition at Stirling, in 1832, the premium for cattle alone amounted to 561 sovereigns, or about 1,730 dollars, and in like proportion for sheep, swine, horses, &c. This looks like being in earnest: the subscribers know that they are spending their money wisely for an object of national importance. It would be no difficult matter to buy at a Scotch fair ten or twenty Ayrshire cows, which would look as if all cast in the same mould, and which would yield, for three months after calving, twenty-four quarts each per day, and

so on in proportion. These cows, too, would graze kindly when dry. The northern Shorthorn, used in the dairies which supply London with milk, shows in perfection the art of breeding for a particular purpose, and these breeds are invaluable. Yet in a drier climate and different soil they might not retain their qualities.

Importing cattle is an expensive and hazardous business. To make it answer, several men in different quarters ought to combine their efforts, and unity of purpose and perseverance must be found in all of them. This would be a very difficult matter. But selection from the stocks around him is in the power of any man who has capital and judgment. Cattle here are much better than sheep; for, except some merinoes and Saxony sheep, the native kinds are a strange medley, but all bad, wanting symmetry and weight. The main object of this letter is, that all stock should be adapted to the soil they are put on. I have seen Leicesters degenerating on lands where Cheviot sheep would have done well; and merinoes put on rich deep lands, where heavy sheep would have got fat. Shorthorns, too, may be seen on lands where they do not find themselves at home.

Yours, II.

(From the Columbia Sentinel.)

WINTERING SHEEP.

The season has arrived when sheep require a little of our time and attention. If these are now bestowed with subsequent ordinary care, sheep will pass through the winter with a trifling loss and much to our advantage. For want of attention at this season of the year, I have seen large flocks almost entirely destroyed, while their owners blamed their bad luck, but not their bad management. Sheep to do well through the winter must be in good condition when they begin it. If they are so, they pass through it without difficulty; but if they are poor at this season, good provender and a regular supply of it, will not insure them well through. To see then that our sheep have been well taken care of during the summer and fall, is an important step with the farmer, and which would be a great saving both in sheep and fodder. It is wrong to permit them to ramble over the fields later than about the first of December, because at that time there is little nutriment in the scanty herbage on which they feed, and the grass itself had better remain on the stem to protect it during the frosts and winds of winter, and prepare it for an early and vigorous growth in the spring; besides as the supply to the animals is small and innutritious, there is great danger that there will be a falling off in its flesh, which it can ill spare, and which to its subsequent existence it is so necessary it should retain.

I have frequently thought that an open December, which is so often wished for by the farmer to save his winter's supply of hay, is more prejudicial to his sheep, when they ramble over the fields, and to his own interest than he is generally aware of. It would certainly comport more with real economy, if he were to bring up his sheep by the 10th of December into winter quarters, even if the weather should remain warm and the ground uncovered. If they lose flesh at this time, they cannot regain it until spring, and the mortality which sometimes costs flocks of sheep, is imputable to this cause.

Sheep in winter should have sheds; the preservation of their health requires this indulgence, and nature prompts to it. Let me ask, if they have the choice, do they remain in the open air in a storm? No—they as instinctively run to their covering as a man does to his house, and if they do not require it quite as much, they appear as grateful for the shelter. For a flock of poor sheep a protection from the weather is all important. Those in good condition do not so much want it, as they have a better coat both of flesh and wool; but for them it is likewise useful,

and a good farmer will not omit to give all the requisite shelter.

As soon as sheep are brought into the yard, the different kinds of lambs, ewes and wethers, should be carefully separated and kept during the winter apart. It is important that those in one yard should be nearly of a size as practicable; for by being so, there are no strong ones among them, to drive the weaker from their provender. All will feed alike and do well. The flocks ought likewise to be as small as we can conveniently make them. It is an invariable rule that a small flock does much better than a large one, even if both, according to their number, are fed equally well. If the flocks in each yard can be reduced to between fifty and one hundred, so much the better; and it is a great desideratum to make them as few as fifty, if it can in any way be effected. It is likewise necessary to have a separate yard for old and poor sheep, and if there are any in the flock that do not subsequently do well, they should be removed into what is commonly called the hospital. These hospital sheep, by being few in number having a good warm shed, a sheaf of oats, or a few screenings from under the fanning mill, once a day, will soon begin to improve and do well. I have had my hospital sheep in a better condition with this care by spring than any other flock, and I must say that for the last three seasons, my sheep were in a better condition when I turned them out of my yard in the spring, than when I put them in the beginning of winter.

Sheep ought to be rather sparingly than sumptuously fed, three times a day, out of racks to prevent them from running over and trampling on the hay. As soon as one is seen in any of the flocks to become thin, it ought to be removed at once into the hospital where it will be better fed. If you neglect to do this, soon it will be too late, and you will suffer loss; for a sheep once reduced to a certain point cannot be recovered. It is good to give them a feeding of straw or pine tops, if you please; it invigorates their health, and makes a change in their food. They ought all to be daily watered, and if your hay has not been salted, they ought to have a lick of salt occasionally. By adopting these rules, you will save all your sheep; or you will not lose more of them than you would of the same number of horses and cattle. They will have no disease among them. I have often thought of an observation made to me by an experienced wool-grower from whom I asked for information of the diseases of sheep; he answered: "What have you to do with the diseases of sheep—take care of them and you will have no need for remedies." This observation struck me as strange at the time, but subsequent experience has amply confirmed it.

And now, what will the farmer gain by keeping his sheep well? In the first place, he will gain in his hay;—a fat sheep will not eat as much as a poor one; he will save all his grain—sheep in good condition do not require any. In the next place, he will save all his sheep—he will have more and better lambs in the spring, and in consequence of it, he will have several ounces of wool more to each sheep; and what is better than all the rest, he will in the end save himself less and anxiety. The saving will at least be from one-eighth to one-fourth of the value of his flock, and all this by attending to a necessary work in due season.

A.

MEANS OF RENDERING THE VINE MORE PRODUCTIVE.

A foreign journal, of some ability, recommends four ounces of alum to be mixed with four pellets of clay, by means of a sufficient quantity of water, and the roots of the vine being uncovered on a fine day towards the end of the winter, they are to be moistened with this mixture, and the earth then changed, so that what was previously uppermost shall be undermost. It is asserted that through this operation a vine produces a great additional quantity of grapes.

HORTICULTURE.

(From the Farmers' Register.)

NATIVE AND FOREIGN GRAPES.

TO THE EDITOR: Essex County, Nov. 16, 1883.

The culture of the grape has excited considerable interest in the United States within the last ten or fifteen years; importations of the vine have been made from almost every vine-growing country; several hundred varieties have been offered for sale, and not unfrequently we have been told, that they are adapted to our country, climate and soil. In 1823, from the flattering accounts I had seen published of the success of the culture of the grape in the United States, for wine, eating, &c., I was induced to try its culture. Vines were ordered from those nurseries that were considered best, some of which were in other states. The kind mostly ordered was of the *Catawba*, for wine; the other varieties were those that had been highly recommended for eating. My grape bill for that year was \$21 70. Next year, 1824, I ordered a much larger number of vines, mostly *Catawba* again, for wine; but the number and variety of those for eating were considerably increased. My grape bill for that year was \$83 25. Those for eating were placed in the garden; those for wine on a poor piece of land, which was intended to be improved; but I became unsettled in mind whether I should move to the west, or remain in Virginia; and one or two years elapsed without much attention to the vineyard, during which time some remarks were thrown out in congress, which induced me to believe, that the high duties on wine would be very much reduced, if not entirely taken off, at some day not far distant. I therefore pulled up the vineyard, and distributed the vines amongst my acquaintances. Those that had been planted in the garden had received more attention—they came to hand labelled, and as they were planted out, they were carefully noted, so as to know the different varieties; and before they began to bear, a good many of the cuttings had been given away, under the impression that they were what they had been received for; but in this there was a great mistake. Not one-half of them were what they had been received for; but as the mistakes were detected, others were ordered to supply their places; but the *Isabella* and *Catawba* (native grapes,) so far surpassed the others, one year with another, in productiveness, and maturing their fruit, that I had nearly all the other varieties, both native and foreign ones, dug up and thrown out of the garden. My unfavorable opinion of foreign grapes, I believe, is similar to that which has been, within a few years, expressed by many others living in different parts of the United States. For wine, the native grape is considered decidedly superior. Even in Florida, it is said the French and Spaniards have in many places dug up their imported ones, and are turning their attention to the culture of the native grape. Of the foreign kinds I should prefer the two white varieties we had before the recent importations, the *summer sweetwater* and *white sweetwater*; they were generally called English grapes, by way of distinguishing them from the common grapes of our country; and for aught I know, were brought here by the first settlers of our country. If so, and time can acclimate them, they may be considered as acclimated, and should be preferred to those of the same kinds that have been recently imported. These two varieties, when well matured, I believe, are generally esteemed as the finest grapes known in our country; but I have seldom seen them come to that state of maturity to render them superior to some of our native varieties, and the product is always small compared to them. They are said to succeed better in our large towns than in the country; and I should suppose so from some publications that I have seen. A description of these grapes is unnecessary, as they are so generally known; but it may not be

amiss to state the many names by which they are known. Mr. Prince, in one of his old catalogues of grapes, calls one of these grapes *early white muscadine*, or summer sweetwater; the other white sweetwater. In one of his late catalogues, he says, the names given to the *Chasselas* grapes, by European publications, contain such a heterogeneous mass of contradictions, that no correct decision can be formed from them. He then proceeds to give a good many names by which they are called, some of which I will repeat, viz.: *early sweetwater*, *August sweetwater*, white sweetwater, (names used in the United States and in England,) *early white muscadine*, *white muscadine*, *amber muscadine*. The other one, *white or golden chasselas*—in England, *D. Arbois*, or *D. Aroyse royal muscadine*. Of the native ones, I should prefer the Isabella and Catawba as I have stated. Mr. Prince, in his catalogue of grapes, No. 385, says, the "Isabella grape is said to be a native of South Carolina, and was introduced to this state (New-York,) by Mrs. Isabella Gibbs, the lady of George Gibbs, Esq. of St. Augustine, who then resided at Brooklyn, Long Island, and in honor of that lady has been called Isabella grape. It is a dark purple fruit, of a large size, oval form, and juicy, and equals some of the secondary European grapes; and for vigor of growth, and an abundant yield, exceeds any other yet cultivated in this country, and requires no protection during the winter season. General Joseph Swift informed me, that a single vine in his garden produced above eight bushels, during several successive seasons. In some instances vines have been stated to have produced a still greater quantity, and large vines of this kind, producing astonishing crops, are now to be met with in various parts of our country. There is no grape which will yield a greater quantity on a given space, or that can be made more lucrative in cultivation for market, than this kind. It also promises to take an important stand in this country for the purpose of making wine, as it possesses the requisites to insure success in making wine of a fair quality, or for making brandy equal to that of France. I have made wine from it of excellent quality, and which has met the approbation of some of the most accurate judges in our country. Indeed this grape, of which but a single vine existed in any garden in 1816, and which I, at that time, met with in the possession of the gentleman before mentioned, and deemed worthy of notice and a name, has now become disseminated to the remotest parts of the Union, and has been sent to a number of the countries of Europe, and to Madeira, &c.; although it has never been offered to the public as on an equality with the highly cultivated and delicious table grapes of France, still it offers to any one who chooses to plant it, a plentiful crop of pleasant fruit, without requiring from him the least care, or needing in winter the least protection, however cold may be its situation. I have also ascertained that the bunches may be dried, as raisins, with the greatest facility, and that they may be preserved in dry sand, saw-dust, or any other similar substance, for months, in the most perfect state. In regard to pruning, which, to a certain degree, is advantageous with all vines, it has been remarked in relation to this, that if the vines are much trimmed at the summer pruning, the fruit is very apt to rot and fall off. A peculiarity exists with regard to several of our native varieties, which is particularly exemplified in the Isabella; it is that of being twice-bearing, or of producing a second crop of fruit on the shoots of the same year, which is frequently the case with this vine; but the grapes seldom attain to maturity, unless in a season when the autumnal frosts are long protracted."

The berries of this grape are about three-fourths of an inch in length, and between one-half and three-fourths of an inch in diameter. They commence ripening with me about the 25th of August, and continue until some time in October.

Pr. Cat. No. 377, "Catawba."—This is a large

grape, of a lilac color, and in some situations, covered with a beautiful bloom, giving to it a blueish purple appearance. The berries have a slight musky taste and delicate flavor, hang loosely on the bunches, which are of good size; and in fact, they are beautiful to the eye, very abundant bearers, make excellent wine, and are tolerable for the table. The pulp diminishes and almost disappears when they are left on the vine until they attain to perfect maturity. The color of the fruit is much varied according to its relative position; such as are fully exposed to the sun's rays is purple; that but partially exposed is of a lilac hue, and those clusters that are completely obscured and shaded, are nearly white, and the berries almost transparent; even in this latter position, where, of course, the maturation is retarded, the fruit is sweeter, but is devoid of that musky flavor which is acquired by that portion fully exposed to the sun and heat. It is more early in ripening than the *Isabella*, and the berries and clusters are of equal, and often rather large size. Although this grape is said to be from the Catawba, still there is much uncertainty on that point, as I am informed by Thomas McCall, Esq. of Georgia, a gentleman now far advanced in years, that in his boyhood he knew the Catawba from its source to where it loses its name in that of the *Waterloo*, and that no such grape was known there. Mr. Adlum states, that he procured it from Mrs. Schell, at Clarksburg, Montgomery county, Maryland, and that the family informed him it was called by this name by the late Mr. S.; but they knew not whence he procured it. The vine in Mrs. Schell's garden has produced, in one season, about eight bushels of grapes; and eleven vines, belonging to Joshua Johnston, Esq. of the same state, and which were reared from that of Mrs. S., have already produced about thirty bushels of fruit at one time. The grape called by Mr. Adlum, *red Murray*, and found by him wild in Maryland, and also in Lyeoming county, Pennsylvania, proved to be very similar to this kind. Mr. A. considers this grape to be worth all others, indigenous or exotic, as a wine grape, and that a greater variety of wines may be made from it than from any other."

The berries of this grape are rather over one-half inch in diameter. They ripen about the time of the Isabella, and I find some prefer eating this to the Isabella; but it is not so with me.

I will make one more extract respecting these grapes, which is from the Albany Argus, as published in the Richmond Enquirer of 1829:—"Of the wine grapes, Capt. Fay prefers the Catawba, concurring with Maj. Adlum, of Georgetown, in this respect. This is a native of North Carolina, and is considered the best wine grape in the United States. It is a very great and certain bearer. But of the grape, the preference is given, among us, to the Isabella: indeed, of all the varieties for our yards, piazzas and small gardens, it has obtained a decided preference. As an article of diet, few fruits are so palatable, nutritious or harmless as the grape. If ripe, they may be freely taken on the most delicate stomach, and in some countries—say Italy, Switzerland and France—they constitute, during their season, the most important article of diet. A gentleman assures us, that twice, during attacks of severe bilious fever, he literally lived upon Isabella grapes for a fortnight; that he ate them without restraint, and without any ill effect; and that they were the only food his stomach craved, or retained without injury."

The *white Scuppernong* grape is said to be a native of the southern part of the United States. In my attempts to raise this grape, I have been very unfortunate, having repeatedly purchased vines, but never succeeded in getting but one to live before last spring, and that one was ingrafted the year before upon a *sloe* grape, that had thrown out a good many shoots a little below the surface of the earth, and though many were inserted, only one lived. I am told it will not succeed when ingrafted upon our common

vines. The *sloe*, I imagine, belongs to the Scuppernong family, for the vine and foliage very much resemble the Scuppernong. The white Scuppernong, in the 9th vol. of the American Farmer, is stated by a gentleman living in North Carolina, to be of the "diocious species, and in order to obtain crops, it is necessary to have vines of both sexes."

Some time after the publication of this piece, I wrote to one of the most intelligent horticulturists of our state, to know his opinion; in reply, he said, all his were females, or bearing ones, and he had not found it necessary to have both sexes, for his bore abundantly. I hope some of the readers of the Farmers' Register will give us some information on this subject, as this grape is held in such high estimation to the south. Let us have some facts: are there no white Scuppernong vines to the south, that are remote from all other grape vines of every kind, and that are productive?

As a description of this grape may be interesting, I will give the shortest one I know—it was written by a Virginian, *Pr. Cat. No. 398*, immediately after the one written by a gentleman in North Carolina. "The wood is smooth and remarkably hard, rarely exhibiting that shaggy appearance of the bark usual with most other vines; the bark of the old wood, is of a light iron color that of the young wood, is of a bright hue, marked with small specks of a greyish white; the leaf is finely indented or serrated, and highly glazed, both above and below; it is tough and durable, remaining attached to the stem until the hardest frost. The berry is of a greenish white color, the skin of a satin-like texture, varied by minute chocolate colored dots. It is pulpy, but easily dissolves in the mouth, and is of a honey-like sweetness, and musky flavor and scent. The berries are congregated in bunches of from two to six each, the weight of the largest being eighty grains, and the smallest forty grains. The vine is a great grower and abundant bearer; its flowers have no odor, and it ripens here (Virginia) the last week in September.—The fruit differs from the *Black Scuppernong* only in respect to color." It appears from the foregoing statement that the Scuppernong does not ripen as early as the Isabella and Catawba; if so, it would be valuable to cultivate with them, as it would form somewhat a succession of valuable fruit.

Constantia.—This grape I received of Mr. Adlum. The growth of the vine, the foliage, and the appearance of the grape, a short distance off, resembles the Isabella, but it proved an inferior eating grape to that; and I had the vines dug up and thrown out of the garden. It has long been considered one of the finest wine grapes in the United States. Mr. Prince considers this variety, the *Alexander*, *Schuylkill*, *Muscadel*, *Spring-mill Constantia*, *Cape of Good Hope*, *Zanker's* grape, and states it is a native of the vicinity of Philadelphia. But Mr. Adlum differs with Mr. Prince in this opinion: he thinks the Alexander or Schuylkill Muscadine, and the Spring Mill Constantia, different varieties, but very much alike; but his impression is they are native grapes.

Bland's Grape.—This grape, I am inclined to believe, is the same grape that has been cultivated in this part of the country for many years, under the name of the *purple English*—it was one of the few that was suffered to remain in my garden when so many varieties were destroyed; but subsequent experience has proved it a very unprofitable grape to cultivate, compared to the Isabella and Catawba. Mr. Prince, in his *Cat. No. 374*, says this grape is known in different parts of the United States, by various names: Bland's pale red, Powell's Powal, Bland's Fox grape, Bland's Virginia, Bland's Madeira, red Scuppernong, Carolina, Mazzei Grape, and in some districts of Virginia, called red English grape. He states "the foliage of the vine is of a pale green hue, the bunches are shouldered or divided, and are five or six inches in length, and sometimes more. The berries are of a round or oblate form, of a pale red color, good size, juicy,

sweet and of very pleasant flavor. In some cases they are said, at full maturity, to become of a dark purple or red wine color. It is an agreeable table fruit, with a thin skin, and little or no pulp."—He supposes it a native grape, and says it was first discovered by Col. Bland, on the Eastern Shore of Virginia, and that he strongly suspects further examination will prove that this variety is found wild in more than one state in the union. I imagine it is unnecessary to proceed any further with a description of the different varieties, as I believe I have enumerated those varieties that I have gained the highest reputation in the United States; but there are other varieties held in high estimation by some.

The grape is frequently propagated by cuttings.—This is done by making choice of such shoots as are strong, with short joints, and well ripened, of the growth of the preceding season, in length ten or fifteen inches, and planted with one end as deep as it can be, to leave one eye or bud above ground. In this way I have planted a great many, and they succeed very well if a wet spring; but I have found but few to live in a dry spring. Some, it is said, raise them from single eyes or joints, by cutting the vine off about an inch above and below the joint, and planting them a few inches below the surface of the earth, and keeping the place moist until they come up. I have never tried this way, but I think it not improbable it would answer very well.

Propagating by layers is a very convenient and sure way, and one that I have often tried. This is done by covering up a part of the growing vine to take root, and the young green shoots of the same season will serve as soon as they are long enough. They should be buried a few inches below the surface, leaving a few inches of the top out. They will soon take root; and if it be done in the spring or summer, they will have fine roots by the fall to plant out.

Propagating by grafting is also a very convenient way, and probably the most speedy one of getting abundant crops. Some years past I had some large old native vines, sawed off a few inches below the surface of the earth, and the roots cleft and grafts inserted; but few lived, and those did not grow off well. Shortly after, a piece appeared in one of our agricultural papers, recommending gimlet grafting; and as well as I now recollect, the piece was written by a person living in the north-west part of New York. He directed the vine to be sawed off a few inches below the surface, and a gimlet hole bored about one inch and a half deep into the root, the scion to be trimmed to fit the hole, and gently driven in; then the root to be covered with well tempered clay, over which the loose earth was to be drawn, taking care to leave the bud of the graft a little above ground. After this publication, a person owning an extensive nursery to the north, recommended the same, which induced me to try the experiment largely. In large roots five and six grafts were inserted. The number inserted for myself and others, mostly of the Isabella and Catawba, could not have been less than five hundred, out of which only one lived the summer through, and that one perished away in the fall for want of nourishment. Since then, a gentleman living in the state of South Carolina, and said to be one of the most successful cultivators of the vine in our country, has recommended this way in a letter dated 1829, and published in the American Farmer. But if this be a good method, I cannot account for my complete failure. The grafting was commenced very early, and occasionally continued through the season; and I think the directions were fully complied with in all respects. Some few of the roots that had been ingrafted, died in the course of the year; the others threw out a great many fine sprouts, and the succeeding year they were cut off within about an inch and a half of the old root, and in them were inserted grafts of the same varieties that were tried the preceding year, and in all other respects treated as they were before. They grew off finely, and all but one on each

side of the large roots were pulled off, and before the frost had set in, most of them were from ten to fifteen feet long, and some few from twenty to thirty feet. I am therefore inclined to believe, it is best to cut the vine off; and let it throw out sprouts and ingraft to them. The winter, I should suppose to be the best time to cut them off; but as some few vines are apt to die from being cut, and it may be important to save them on account of their favorable situation, they can be cut partly off, which will cause them to throw out sprouts and prevent their dying. As the young vines are apt to be injured by grazing animals, they should be cut off the winter preceding the one that the land is to be fallowed for corn. The sprouts will then be ready to ingraft upon when the field will come under cultivation, and they will also be more convenient to attend to, as the sprouts from the old roots will require pulling off the first year, to prevent their overrunning the grafts. Not unfrequently are seen a great many large, flourishing, worthless vines, near buildings, that could so easily be converted into profitable ones, that it is a pity they should be suffered to remain as they are. At a farm I have, within two hundred yards of the buildings is an old grave-yard, in which no person, I believe, has been buried for the last fifty years; but not wishing to cultivate over it, and as it had grown up in trees and vines, and looked unsightly, a few years past I had the large trees cut down, the small ones topped, and the vines ingrafted. The spot now adds to the beauty of the farm, and is becoming profitable. I have found no advantage from ingrafting the foreign grape on the native: the first ones ingrafted grew off finely, and the prospect was truly flattering; but the winter killed them. They were again ingrafted as before; the weeds and grass were kept from shading the grafts, and the leaves of the graft, for several feet from the ground, were stripped off, so as to let the sun mature the wood as much as possible. The growth proved luxuriant, the wood soft and spongy, and they were again mostly killed during the winter. Those that lived were seriously injured, and killed nearly down to the ground, since which, they have continued very unpromising. With respect to the future management of native vines, after they are planted or ingrafted, it is unnecessary to say much, as they require but little care or attention compared to foreign ones; and I must refer those who wish to cultivate the foreign ones, to those who have written on the subject. The ingrafted root, as I have stated, must have the sprouts pulled off the first year, to prevent their overrunning the grafts; and if the ingrafting be done several inches below the surface of the earth, and the sprouts carefully pulled off from the old root, (and not broken off near the surface of the earth,) and the grafts should grow off finely during the year, the old root will seldom, if ever, throw forth another sprout. Those intended to run on living trees, should have the trees topped to ten or twelve feet in height, so as to give the vine a chance to overrun them. If the root be vigorous, several years will elapse before the vine will require trimming. I have none that I think yet require it; but when they do, I think it probable I shall make short work of it, by cutting off some of the largest and oldest branches, with a saw or hatchet. Vines planted in a garden should receive more care and attention than those planted at a distance from buildings. Probably it would be as well for me to state how I have managed mine; others can adopt a different plan if they think best. My garden contains one acre of land; it is divided into six squares of equal size, through the middle of which is the main walk, ten feet wide, opposite to the south door of my house. Along this walk I determined to plant my vines, and after some reflection, I came to the conclusion to plant them fourteen feet apart, across the walk, and to have a post on the inside of each vine one foot, making, from the outside of one post to that of the other, twelve feet, and to have them apart, the other way, eight feet. After fixing the distances, a great difficulty

presented itself. I had ordered the finest varieties, both of the native and of the foreign ones, supposed in our country; but the order in which the different varieties should stand along the walk, and the number of each variety, was far, very far, beyond my sight; but one thing was full in view—any vines proving worthless would have to be dug up, which would destroy the beauty of the walk for years. The nature of the difficulty was such as not to be overcome but by experiment; and to relieve myself from a state of perplexity and vexation, I came to the conclusion, as the native grapes were said to be the most flourishing, to begin with them next to the house door. The Catawba was first planted on each side of the walk, opposite to each other: after the Catawba, the Isabella in the same way; after which the other varieties.

After a few years, the Catawba and Isabella proved so much more productive than the others, that I had all the others, except a few at the far end of the walk, dug up, and the Isabella planted where they stood. They are now becoming very productive; but as yet no frame for some of them has been erected. The Isabella and Catawba that were first planted, have an excellent frame, extending in length about one-third the length of the walk. It is supported by cedar posts, from eight to ten inches in diameter, the ends of which, previous to their being planted, having been sufficiently charred to destroy the sap, without which the sap would have soon rotted, and the posts would have become loose. The charring will probably also add to their durability. The plates are made of chestnut, and five by seven inches square, and run lengthwise of the walk. The cross pieces are also of chestnut, three inches square, and twelve feet long, and are nailed to the plates at each end, two feet from the centre of each other, making twenty-one inches apart. Across these pieces, lengthwise of the walk, on the upper side, were nailed cedar poles split in half, at the same distance apart as the cross pieces. The poles selected were those that had the most heart, and about three inches in diameter. The height of the frame is seven feet to the top, so that a person standing on the ground can select any bunch he desires. I would recommend to any person erecting one like this, to place their cross pieces each way six inches nearer than I have mine, as I find that heavy rains are apt to beat some of the ends of the branches through. The frame, or trellis, if desired, can be ten feet wide, instead of twelve; but less in width would not look well, nor would it give sufficient room for vigorous vines unless planted further apart than I have recommended. A flat frame, I think, should be preferred to one raised in the middle, for it is more easy to make; the fruit is more convenient to get, the free circulation of the air in the garden is not so much obstructed; the vines are not so easily injured by the winds; and it looks as well or better, as it has fewer naked places, and those few not so much exposed to view, and the vines are more easily trimmed, and do not require one-half as much tying to keep them in their places. In trimming, we get upon our frame, or trellis, in the winter, and walk all over it, and cut out as much of the old wood and the immature shoots as possible, but taking care to leave as many of the finest shoots of the growth of the preceding season as will do to tie down to the frame from twelve to eighteen inches apart, which shoots we generally shorten to ten or fifteen eyes; but sometimes we are compelled to have more, sometimes less, so as to fill up intervals.

As the frame or trellis which I have described, may not suit the convenience of all, I would suggest a more simple one. A frame only five feet high, so as not to obstruct the view of the garden; the posts of which should be about six inches in diameter, and made of cedar locust, or some other durable timber; and the ends intended to go into the ground, should be charred and planted ten feet apart. There should be three rails from post to post, one of which should be two feet from the ground; one within a few inches

of the top; the other, half way between them. They should be let into the posts and pinned, to prevent their slipping out. Good heart cedar poles, about three inches in diameter, will be found very convenient and durable for the rails. Vines for a frame of this kind, I should suppose, ought to be topped and tied to the post, as soon as they are long enough to reach the upper rail, and all the buds rubbed off of the stem except six, two of which should be left near each place where the rails enter the post, so that the branches from the six buds could be easily trained to the railings on each side of the post; the branches to each rail should be tried in three places—once, half way between the posts, and again, on each side of that, half way between that place and the post. But vines tied in this way, I have found, are apt to keep slipping, until they get to the under side of the railing, after which the strings alone have to support them; and not unfrequently, from the weight of the grapes and vines, the strings give way, and the grapes are ruined. I would therefore suggest another way to tie them, which I think preferable to the foregoing, and one that I have never seen recommended. Let each rail have three auger holes bored through it from the top to the bottom, at the same places that they have been directed to be tied; then put the vine over the auger hole on the upper side, and take a white oak split, or bark of some kind, and run the two ends through the auger hole, one on each side of the vine, and bring the ends up on each side of the rail and tie them at top. The middle tie should confine the ends of the two branches, each one of which should pass the auger hole one eye or bud. This would confine the branches to the top of the rail, and the shoots from the branch would hang on each side of the rail, and balance each other, even if the strings should give way. The ensuing winter, as these branches must be cut off, provision should be made to supply their places, which can be done by leaving in the spring one of the finest shoots on each of the six branches, within an inch or less of the stem, and rubbing off the other shoots near it. The branches tied to the railing should be cut off within about an inch of the stem; this will form six spurs about an inch in length, from each of which a shoot should be annually raised to supply the place of the one to be cut off. The reason why shoots should be raised annually, is because nearly all the fruit is produced from the shoots of the year, thrown forth from the growth of the preceding year—each eye generally producing a shoot with three or four bunches. But should there be any barren shoots, they should be rubbed off.

I do not know that it is necessary for me to say any thing on the culture of the vine, as my remarks have been mostly confined to those ingrafted upon the native stock, which will require none, and those planted in a garden, which will of course be cultivated as the garden is. But I will merely state it is the opinion of European writers, that working vines when in bloom is apt to cause the blight of the blossoms.—How far this is applicable to our native grapes, I am not prepared to say; but I have frequently observed them, not only to shed their bloom, but even their young grapes, in those places where the vines are left so thick as, in a great measure, to exclude the sun and air from the bloom. Decayed vegetable matter, lime, ashes, &c. are thought valuable manures for vines; but not animal manures, unless applied in small quantities at a time. These are said to cause the grapes to rot. This I believe correct, for I think I have seen this the case in my own garden.

The longevity of the vine is said to be very great—that of several hundred years—if so, we plant not only for ourselves and our children, but for generations to come.

I hope you will excuse the length of this communication, as the grape is more generally esteemed than most any fruit we have, and as yet but little has been said in the Farmers' Register on this subject.

Yours, respectfully, EDWARD F. NOEL.

RURAL ECONOMY.

(From the New England Farmer.)

GROUND RICE.

MR. FESSENDEN.—Your having published, a short time since in the N. E. Farmer some receipts for the using of *ground rice*, a friend in the country, who has long been known for preparing nice dishes for her friends, has sent me some for both whole and ground rice—and as the mill now established at South Boston produces both these articles of very superior quality, and always to be had *fresh cleaned*, and ground—it is remarked by all our cooks that this rice is so very clean, as not to require any picking or washing, and saves them much time.

Your friend, &c. R.

Rice Cake.—Mix ten ounces of ground rice, three ounces of flour, eight oz. of powdered sugar; then sift these articles by degrees into eight yolks and six whites of eggs, and the grated peel of one lemon. Mix the whole well together in a tin stewpan over a very slow fire with a whisk, then put it immediately into the oven in the same pan, and bake forty minutes.

Another Rice Cake.—Beat twelve yolks and six whites of eggs, with the peels of two lemons grated. Mix one pound of rice flour, eight ounces of flour, and one pound of sifted sugar. Then beat it well with the eggs, by degrees for an hour, with a spoon. Butter a pan thoroughly and put it in a gentle oven, an hour and a half will bake it.

Rice Caudle.—Soak some whole rice in water an hour, strain it, and put two spoonfuls of the rice into a pint and a quarter of milk; and simmer, till it will pulp through a sieve. Then put the pulp and milk into a saucepan, with a bruised clove, and a little white sugar. Simmer ten minutes; if too thick, add a spoonful or two of milk, and serve with thin toast.

Rice Milk.—Is made by washing the whole rice very nicely, and simmering over a slow fire, with a considerable quantity of milk, till very soft; then flavored with lemon, spice and sugar.

Ground Rice Milk.—Boil one spoonful of ground rice, rubbed down smooth with three half pints of milk, a bit of lemon peel, cinnamon, and nutmeg.—Sweeten when nearly done.

Rice Paste.—Boil a quarter of a pound of ground rice, in the smallest quantity of water; strain from it all the moisture, as well as you can; beat it in a mortar, with half an ounce of butter, and one egg, well beaten. It will make an excellent paste for tarts, &c.

Small Rice Puddings.—Wash two large spoonfuls of rice, and simmer it with half a pint of milk till thick; then put with it, the size of an egg of butter, and near half a pint of thick cream, and give it one boil. When cool, mix four yolks, and two whites of eggs well beaten; sweeten to taste and add nutmeg, grated lemon peel, and a little powdered cinnamon. Butter little cups, and fill three parts full, putting at the bottom some candied orange or citron. Bake three quarters of an hour in a slow oven. Serve the moment before to be eaten, with sweet sauce.

Plain Rice Pudding.—Wash and pick some rice; throw among it some alspice finely powdered, but not much; tie the rice in a cloth, and leave plenty of room for it to swell. Boil it in a quantity of water for an hour or two, when done eat it with butter and sugar, or milk. Put in lemon peel if you choose.

Rice Pudding with Fruit.—Swell the rice with a very little milk over the fire, then mix fruit of any kind with it; currants, gooseberries scalded, pared and quartered apples, raisins or black currants, with one egg in the rice to bind it. Boil well, and serve with butter and sugar. If apples are used, it is better to enclose them in the rice, as with paste. This makes a very delicious pudding.

A Dutch Rice Pudding.—Soak four ounces of rice, in warm water half an hour, drain the water from it, and throw it into a stewpan, with half a pint of milk,

a stick of cinnamon, and simmer it till tender.—When cold, add four whole eggs well beaten, two ounces, of butter, melted in a tea-cup full of cream, three ounces of sugar, a quarter of a nutmeg, and some lemon peel. Put a light puff paste into a mold or dish, and bake in a quick oven.

A Rich Rice Pudding.—Boil half a pound of rice in water with a little salt, till quite tender, drain it dry. Mix it with the yolks and whites of four eggs, a quarter of a pint of cream, with two ounces of butter melted into it, four ounces of beef suet or marrow, finely spread, three quarters of a pound of currants, two spoonfuls of brandy, one of peach water or nutmeg and lemon peel, when well mixed, put a paste round the edge, and fill the dish; slices of candied orange, lemon or citron, if approved. Bake in a moderate oven.

Savory Rice.—Wash and pick some rice, stew it very gently in a small quantity of veal, or rich mutton broth, with an onion, a blade of mace, pepper and salt, when swelled, but not boiled to mash, dry it on the shallow end of a sieve before the fire, and either serve it dry, or put it in the middle of a dish, and pour the gravy round, having heated it.

MISCELLANEOUS.

(From Goodsell's Genesee Farmer.)

ENCOURAGEMENT TO PERSONS OF MATURE AGE TO CULTIVATE THEIR MINDS.

Instances have frequently occurred of individuals, in whom the power of imagination has, at an advanced period of life been found susceptible of culture to a wonderful degree. In such men what an accession is gained to their most refined pleasures! What enchantments are added to their most ordinary perceptions! The mind awakening, as if from a trance to a new existence, becomes habituated to the most interesting aspects of life and of nature: the intellectual eye is "purged of its film;" and things the most familiar and unnoticed, disclose charms invisible before. The same objects and events, which were lately held with indifference, occupy now all the powers and capacities of the soul; the contrast between the present and the past, serving only to enhance and endear so unlooked-for an acquisition. What Gray has so finely said of the *pleasures of recollection*, conveys but a faint image of what is experienced by the man who, after having lost in vulgar occupations and vulgar amusements his earliest and most precious years, is thus introduced at last to a new earth:

"The meanest flowret of the vale,
The simplest note that swells the gale,
The common sun, the air, the skies,
To him are op'ning Paradise."

AVARICE.—A neighbor once refused another the privilege of his spring of water. He was thus compelled to dig a well, by means of which he accidentally filled up a vein which supplied his neighbor's. Thus avarice often defeats itself by its own meanness, and our enemy as frequently benefits us as injures himself.—*Evening Star.*

LARGE CALF.—A full blooded bull calf of the Durham breed, raised by Samuel Look, in this city, short of eleven months old, weighed, a few days since, 775 pounds, by the scales. This is believed to be the largest and best calf of its age ever raised in this section of the state. Who can produce an equal?

[*Lancaster paper.*]

SHARP PENETRATION.—"You don't love me; I know you don't," said a young married lady to her husband. "I give you credit, my dear, for a keen penetration," was his consoling reply.

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 3.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ————Rappahannock, 3.00 a 4.00.—Kentucky, 4.00 a 8.00. The inspections of the week comprise 62 hhd. Ohio.

FLOUR.—Best white wheat family, 6.50 a 7.00; 2d. quality, 6.00 a 6.50; super Howard street, 5.00 a —; (wagon price, 5.00 a —); city mills, 5.00 a —; city mills, extra, 5.12½ a —.—CORN MEAL, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—GRAIN, red wheat, 90 a 1.00; white do 1.15 a 1.20.—CORN, yellow, 55 a 56; white, 54 a 55; in the ear, — a — per bbl.; RYE, 65 a 66; chop rye, per 100 lbs. 1.50 a —.—OATS, 35 a 36.—BEANS, 1.50 a —.—PEAS, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—CLOVESEED, 4.50 a 5.00; TIMOTHY, 2.50 a 3.00.—ORCHARD GRASS, 3.00 a —; Tall Meadow Oat Grass 2.50 a —; Herd's, 1.25 a —.—Lucerne 37½ a — lb.—BARLEY, — a —.—FLAXSEED, 1.62½ a 1.70.—COTTON, Va. 10 a 12; Lou. 13 a 14½; Ala. 12 a 13; Tenn. 10½ a 12; Upland 11 a 12½.—WHISKY, hhd. 1st p. 25 a —; in hhd. 24 a —.—WOOL, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—UNWASHED, Prime or Saxony Fleece, 30 a 35; American Full Blood, 26 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—HEMP, Russia, ton, \$165 a 180; country, dew rotted, 6 a 7e. lb. water rotted, 7 a 8e.—FEATHERS, 37 a 39; Plaster Paris, per ton, 3.75 a —; ground, 1.37½ a — bbl.—IRON, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 85.00 a 90.00.—Prime Beef on the hoof, 6.00 a 7.50.—Oak wood, 4.50 a —; Hickory, 6.00 a —; Pine, 3.50 a —.

From the Baltimore American, January 28.

FLOUR.—Howard street Flour may be quoted at \$5, from wagons; there is but little coming in, and most of that is stored on account of the country owners. Some single loads were taken yesterday and this morning at a fraction higher. Sales of a few hundred barrels have been made from stores at \$5, for cash.

We hear of no transactions in City Mills Flour, we quote nominally at \$5, full.

GRAIN.—We have no sales of moment to report, and know of no changes.

Prices Current in New York, January 25.

Beeswax, yellow, 20 a 21. Cotton, New Orleans, .11 a .13; Upland, 9½ a .11½; Alabama, .11 a .12½. Cotton Bagging, Hemp, yd. .20 a .22; Flax, .18 a .19. Flax, American, 20 a 22. Flaxseed, 7 bush. clean, 14.75 a 15.00; rough, 14.00 a 14.25. Flour, N. York, bbl. 5.37 a 5.50; Canal, 5.56 a 5.75; Balt. Howard st. 5.50 a 5.75; Rh'd city mills, 6.75 a —; country, 5.00 a —; Alexandria, 5.37 a 5.50; Fredericksburg, — a —; Petersburg, — a —; Rye flour, 3.50 a —; Indian meal, per bbl. 3.52 a —, per hhd. 15.00 a —.—Grain, Wheat, North, — a —; Vir. 1.06 a 1.10; Rye, North, .60 a 70; Corn, Yel. North, .70 a .75. Barley, .64 a —; Oats, South and North, .35 a —; Peas, white, dry, 7 bu. 7.00 a 7.50; Beans, 7 bu. 10.00 a 12.00; Provisions, Beef, mess, 3.62 a 9.50; prime, 5.62 a 6.00; cargo, 4.75 a 5.08; Pork, mess, bbl. 14.00 a 14.75 prime, 10.25 a 11.00; Lard, 8½ a 9½.

RED TOP OR HERDS GRASS SEED.

A supply will be received in a few days, price \$1.25 per bushel, by

I. I. HITCHCOCK,
Amer. Farmer Establishment.

WANTS A SITUATION.

A single man wants a situation as a farmer or manager to an estate, he is well acquainted with the various branches of farming, breeding and feeding of cattle and sheep, draining, ditching, &c. would prefer a situation where a large quantity of wheat can be raised.

For further information apply at this office.

Baltimore, January 24, 1834.

A FINE JACK AND JENNY,
For Sale.

I have the selling of a fine Jack and Jenny, which measure as follows, viz:

The Jack is of the extraordinary height of fifty-seven and a quarter inches, and was eight years old last spring. He was imported from Malta, by Mr. C. Thorndike, of Boston, and is unquestionably one of the largest and most valuable animals of the kind in the United States. Price \$500.

The Jenny is eight or nine years old, (not more,) is fifty and three-quarter inches in height, and a fine animal. While the above is the lowest price for the Jack, I will sell the two together for \$1000. Letters in regard to these animals (post paid) will be promptly answered. Either of the animals will be sold separate from the other, if desired.

I. I. HITCHCOCK,
American Farmer Establishment.

DUTTON CORN.

The subscriber has procured a small quantity of this celebrated variety of Corn. The following is the description of it, by Judge Buel, of Albany, N. Y.

"In making a choice of sorts, the object should be to obtain the varieties which ripen early, and afford the greatest crop. I think these two properties are best combined in a twelve rowed kind which I obtained from Vermont some years ago, and which I call Dutton corn, from the name of the gentleman from whom I received it. It is earlier than the common eight rowed yellow, or any other field variety I have seen, and at the same time gives the greatest product. I have invariably cut the crop in the first fourteen days of September, and once in the last week in August.—The cob is large, but the grain is so compact upon it, that two bushels of sound ears have yielded five pecks of shelled grain, weighing 62 lbs. the bushel."

[American Farmer, vol. 15, page 43.]

I. I. HITCHCOCK,
American Farmer Establishment.

FRUIT, ORNAMENTAL TREES,
SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Morus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chesnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch. Nov. 15.

TO THE PUBLIC.

J. S. EASTMAN, begs leave to tender to the public his grateful acknowledgements for their liberal encouragement to him during the twelve years he has been engaged in this city in manufacturing Agricultural Implements. He has been gradually extending his business from its commencement, and for the last four years, public patronage has been greatly extended towards him, which has induced him during the last season to increase his establishment by the erection of extensive shops and machinery, with the addition of steam power, and he is now prepared to receive orders for any machinery required in the agricultural line, it being his object to confine himself principally to the agricultural interest. He has on hand a general

assortment of Implements of Husbandry, which he feels assured, are manufactured of as good materials and the workmanship as faithfully executed as any in this country. His patent Cylindrical Straw Cutters have stood the test of twelve years, and now about five hundred are in operation, and he challenges its superiority; all sizes, from \$30 to \$90, will be kept constantly on hand ready for shipment. Also Fox and Borland's Threshing Machine, which has thus far greatly exceeded his most sanguine expectations—he has put nine into operation during the last harvest, and each has given perfect satisfaction. Wheat Fans of superior workmanship—prices \$25, \$28 and \$35.

Being the first to introduce Gideon Davis' Improved Patent Ploughs in this city, and having an extensive demand for them, he confines himself more particularly to them than to any other kind, keeping always a full supply of them, with wrought and cast shares; yet he has a variety of other kinds that may be preferred by some persons. Every variety of useful farming implements will be kept constantly on hand, and he will take special care to have them manufactured by himself of prime quality.

SEED DEPARTMENT.

Having again taken the agency for the Messrs. Landreth, of Philadelphia, he will shortly be supplied with an assortment of their valuable Garden Seeds, which are already well known to the public. He has also a stock of Garden Seeds on hand, which may be relied on as genuine.

Likewise all kinds of Grass Seeds will be kept in store, when they can be procured of fine quality.

Orders for Cloverseed will meet prompt and particular attention, if accompanied by the cash, it being a cash article with very small profit.

He would remind the public that many articles which are rare and scarce, are often ordered when they cannot be furnished, and many communications are made to such establishments in which the proprietor can have no interest further than to afford such information to his correspondents as may be in his power, in such cases it is expected that the letters will come post paid.

N. B. It is the desire of the subscriber, in order to save trouble, to confine himself to a cash business in future, particularly in small amounts. J. S. E.

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Editorial, Quality of Milk from different cows—New steamboat—Elegant extract—Scuppernon grape—Black sea wheat—A sensible Horse—Seraps—Extracts from a Report of the Trustees of the Kennebec county, (N. Y.) Agricultural Society, with calculations showing the relative profit from raising horses and oxen—Broom Corn, its history and value—Adaptation of breeds of Live Stock in the United States to the soil—On wintering Sheep—Means of Rendering the Vine more productive—Essay on the Cultivation of native and foreign Grapes—Receipts for various dishes from Ground and Whole Rice—Encouragement to persons of mature age to cultivate their minds—Seraps—Prices Current of Country Produce in the New York and Baltimore Markets—Advertisements.

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do do for North Carolina,	Dr. W. H. Williams.
do do for the Southern and Western States,	George Oates, Collector.

✂ DIRECTION OF LETTERS.—Address all business letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, FEB. 7, 1834.

STRAW CUTTING MACHINE.—A few weeks ago, we purchased for a subscriber on the Eastern Shore of Maryland, one of Sinclair & Moore's Straw Cutters, of the middle size. We this week received from him the following testimony of its excellence, which we publish rather for the benefit of the public, than for that of the worthy manufacturers. By the way it seems to be universally allowed by all who have tried it, that the saving by the cutting of *all long food* for stock is a very important one. We have noticed the testimony of farmers, of graziers, of dairymen, and of stage proprietors, all to the same point, and have never heard one state a contrary opinion against it. Those who have tried steaming this cut food, seem to agree pretty unanimously, that this operation improves its quality still as much more. Surely these facts are worthy the careful attention of all concerned in the feeding of cattle and horses—but here is an extract from our friend's letter:

"I am delighted with my straw-cutter. It will have saved all the money it cost before May-day. The 'meat, drink, washing and lodging,' of each of my carriage horses, cost me the last year at least \$100; by means of the straw-cutter, I can give them better board, keep them sleeker and happier; and (at the present price of produce) both of them, the current year, will not cost me more than \$60. I shall be the means of procuring a market for several straw-cutters, at which I rejoice not on account of the seller, but the buyer.

FALL SOWING OF GARDEN VEGETABLES.—A writer in the Genesee Farmer, details some experiments of his in fall sowing of vegetables, which for the most part were unsuccessful. He planted late in November, peas, beets, onions, carrots, parsnips and salsify, all of which failed except the carrots and parsnips, which were fine and very early. "For early lettuce," he says, "it is a good practice, which I have followed for many years, to sow in September or October, and before winter sets in to cover the plants with brush and other loose rubbish. This will be early and fine, especially if transplanted, at suitable distances in light rich ground. Practicing this mode, I have usually a full supply for my table (and I may say for my neighbors too) early in the spring, before others have scarcely thought of sowing. For early onions there are none probably that come to a state fit for the table so early as the potato onion, which should be planted in the fall, in October or November, and I have no doubt, (though I cannot speak from experience) that for those who are fond of the tree onion, to produce it early, it would be a good practice to plant out the acorns in the fall."

HORTICULTURAL SOCIETY OF MARYLAND.—At the regular monthly meeting of this useful association on Saturday evening last, 1st February, the following, received from Dr. PERINE, U. S. Consul at Camperdown, were exhibited:

Seven hammocks, made of the Sisal hemp—various specimens of the leaves from which the hemp is procured—supposed to be the *Agave Americana*. A variety of seeds—and two hives of stingless bees.

The committee on the culture and products of the Kitchen Garden, acknowledge the receipt of specimens of asparagus and rhubarb, raised by Mr. Blanchard, gardener to B. C. Howard, Esq.

Also, some uncommonly large specimens of carrots and parsnips, from Capt. Wm. Matthews.

SELF DEFENCE.—A man near Newark, N. J. was kicked almost to death by a horse which he was beating unmercifully.

No. 47.—Vol. 15.

CORN CROP.—A. Mr. Sanders of Clermont, Columbia county N. Y. raised the last season a crop of Corn averaging about eighty bushels (of shelled corn) to the acre. He was honored as he well deserved to be, with a premium from the Agricultural Society of the county, in his application for which, he gives the following account of his way.

"The ground on which the above crop was raised, is a sand loam in excellent heart, with a rich clover sod, two years from seeding, turned over in the early part of May last; and with a view to mellow the surface, once harrowed over before planting. The corn was planted about 20th of May, and as near as the furrows could be calculated accurately, as made with a corn plough, planted about 2 feet 3 inches apart each way, placing 4 kernels in each hill, so as to insure the growth of three stalks, which is a desirable number, although four were left, if their appearance was healthy. The land was again harrowed when the blade became about six inches long, if extended—in a few days thereafter, say ten, the corn plough was passed through in one direction, and the whole well hoed; and again, when the blades became 18 or 20 inches long, the plough was passed through twice in the contrary direction, which was the last operation until the stalks were topped, and that not done before they were nearly ripe, that the grain might derive full benefit of sustenance from them.

"I am confident in the opinion, that while the blades are small, say until 18 or 20 inches, corn land cannot be too much stirred, as it subdues all vegetable matters that subtract from the nutriment that should apply to the growing stalks, and properly mellow the soil to be penetrated by the tender roots of the plant in search of food. But after the plant has attained the height of 2 feet or more, I conceive any operation on the soil, (except upon the surface, by a corn cultivator or simple hoeing,) injudicious; for the plants having then extended their roots in great number, must be injured by any process of ploughing, by the same parity of reason, as the growing tree is frequently destroyed where its roots have been disturbed.

"The observation of your applicant upon this mode of cultivation was, that his corn field kept remarkably free from weeds, or any vegetable substance that might injure the yield. The expense beyond the most ordinary mode of cultivation, did not exceed that of harrowing, as until the middle of September last, I did not indulge the idea of entering for premium. Had it been so intended in spring, I should have tested the experiment on J. Buell's plan, by drills, selecting from the three modes proposed by him, the two drill system, as most applicable to my land. The method in relation to the corn crop above detailed, is that generally pursued by me; of its propriety I am induced to think well, as upon 35 acres of land, I am full in the belief, I have raised this season 1700 bushels of corn, and so little defective that an ordinary farmer would have cribbed it without sorting, and I indulge the idea that if a drought had not injured the plants on an upland field at a critical time, my produce would have been much increased."

TURNIP-ROOTED CABBAGE.

Mr. HITCHCOCK: Baltimore, February 3, 1834.

Sometime ago I saw in your paper, notice of a vegetable lately introduced into the United States, it is sometimes called the Turnip-rooted Cabbage, the Turnip above ground; it is however, better known by the German name, Khol Rhabb, or Arabian Cabbage. I have cultivated this Cabbage for three years past, and last year had it in high perfection, I was induced to persevere in this cultivation, from having seen the plant so often in the East Indies, where I lived a long time, it is the most esteemed of all the vegetables there. During the last summer, I had a gentleman at my house, who had been the travelling companion of Sir Humphrey Davy, and who has lately come

from Germany, he says it is so much esteemed there, that travellers have been known to go a post of ten or fifteen miles before they dined, that they might get a dish of this favorite vegetable. Sir Humphrey liked it so much, that on his arrival in England, he offered half a guinea a root for it in Covent Garden market. I have seen it in great perfection at Parmentier's garden, near New York, his daughter told me that the plant required a great deal of manure, and when cultivated in that manner, it was a most valuable vegetable.

I inquired about it at the Horticultural gardens near London, I suppose the most extensive establishment of this kind in Europe. It was the opinion there that the plant of Europe differed from that of Asia, but my experience I think proves the reverse; quick vegetation is the secret of producing vegetables of high flavor, the onion by this process is rendered very mild.

To be cultivated properly this vegetable should be placed in a rich garden soil, well manured, and if necessary watered. For the table it ought not to be allowed to grow larger than an orange. I have had them of ten or twelve pounds weight, they are then fit only for cattle, for they become fibrous.

In India they procure their seed from Persia, or the Cape of Good Hope.

IMPORTANT TO FARMERS—RAISING PIGS FROM CUTTINGS.—Mr. Jenks, of the Nantucket Inquirer, very gravely accounts for the fact that *pork* is so very plenty in the Western States, by declaring that the pig's tails are cut off and planted every season, and that the "yield" is prodigious.

☞We don't believe in Mr. Jenks' theory.

WATSON'S RED HYBRID RHUBARB.—An article in the Horticultural Register describes this in many respects as superior. One peculiar characteristic, says the writer, is the production of two separate and distinct crops in a year. It may be plucked from the beginning of April to the end of May. The remaining leaves then perish, but soon others are pushed forth with vigor, which may be gathered through the summer, and preserved with sugar for winter's luxury.—N. Y. Farmer.

PRESERVE YOUR VESSELS.—A gentleman who has tried the experiment, recommends all ship-builders, to put between the ceiling and plank, pulverized CHARCOAL, which is a much better preservative than salt—is much lighter, and prevents the dry rot, absorbing, as the charcoal does, all the acidity of the wood. The same article is also very useful in preserving meats, fruits, &c. which, by its astonishing quality may be sent to any part of the world, without injury. Try it and be convinced.—N. Y. Gazette.

HINTS TO HOUSEWIVES.

About the last of May, or the first of June, the little millers, which lay moth-eggs begin to appear. Therefore brush all your woollens, and pack them away in a dark place covered with linen. Pepper, red-cedar chips, tobacco,—indeed, almost any strong spic-smell,—is good to keep moths out of your chests and drawers. But nothing is so good as camphor. Sprinkle your woollens with camphorated spirit, and scatter pieces of camphor gum among them, and you will never be troubled with moths. Some people buy camphor-wood trunks, for this purpose, but they are very expensive and the gum answers just as well.

The first young leaves of the common currant bush, gathered as soon as they put out, and dried on tin, can hardly be distinguished from green tea.

Cream of tartar, rubbed upon soiled white kid gloves cleanses them very much.—Frugal Housewife.

AGRICULTURE.

(From the New York Farmer.)

SIX YEARS ROTATION OF CROPS, AND ITS RESULT.

MR. ULEET: *Charlton, Saratoga Co. Oct. 25, 1833.*

SIR,—I have often thought if farmers would, more frequently, give an interchange of their views and practice in agricultural pursuits, through the medium of your excellent Magazine, the brotherhood would receive many advantages and useful hints; and being fully satisfied that I have received (even in a pecuniary point of view) more than the principal and interest on the three dollars I sent you for the New York Farmer, as also many mental feasts on rainy days and evenings, from its pages; besides the many useful hints my wife and daughters have received, which have added not a little to our comfort and happiness, I feel an obligation resting on me, although entirely unaccustomed to writing for the public eye, to attempt to contribute my feeble part in so good a cause.

The most of my neighbors around me still continue the old system of summer fallowing and ploughing, two, three or four times for every crop, which is usually much less than might be obtained, with judicious management, with once ploughing only, and save the loss of much labor, team, and wear and tear, and use of land by summer fallowing, (which ought to be exploded,) but also the great loss of the fermentation of the sod and other substances, which might otherwise be the best of food for the grain crop. I feel impelled, by a sense of duty, to send you an account of what I consider the great advantages of the Six Years Rotation System of Crops, and only once ploughing for any crop. I have pursued it for many years, and, if it was generally adopted in this great empire state, I am convinced it would make a clear gain annually of \$50,000.

From my early days I have been accustomed to agriculture, and when a boy would frequently ask many questions of my father, (whose memory I revere,) if such and such methods of farming would not be better than the old system. As my questions were frequent, and had, probably, become rather troublesome, he gave me, for a general answer, to note down such plans as my own brain would suggest as an improvement, and if I lived to become a man, I could then put them in practice, and ascertain their utility.

The first of all my plans was to clear the ground of stumps and stones, and if it was but one acre a year that could be added to, let that be well done, for it is an important point, ever to be borne in mind by the farmer, after he determines to do a thing that it be well done.

I then begin my six years rotation of crops with Indian corn and potatoes. I spread my manure in the spring of the year, in its long unfermented state, from the barn yard, on the sod, before the plough, then smoothly invert the sod, at the depth of four and a half inches following with the roller, and then with St. John's double harrow effectually lengthwise, I, then, with a simple machine, mark out two or three rows at a time, going through both ways, from two feet ten inches to three feet apart, plant the deep grain long-eared eight-rowed corn, get from thirty to ninety bushels shelled corn per acre, averaging only forty-five or fifty, because much of it has no other manure than gypsum and the fermentation of the sod. My method of cultivating the corn crop is very similar to that excellent communication made by Jesse Buel, Esq. in your New York Farmer, p. 147. Cost of preparing the ground and tilling the corn, is \$8 per acre; the stalks will pay for harvesting the corn.

The second year I plough my stalk ground in April into fifteen pace lands, sow barley, peas or oats,

and harrow lengthwise first, then crosswise. If the weather is dry, and there are any lumps, pass the roller over, and open the dead furrows with the plough. Crop of oats average forty-five bushels, barley twenty-five, peas fifteen. Cost of tilling \$4 per annum.

Third crop. As soon as the hogs have cleared the stubble of grain, I turn the stubble all smoothly under, about four inches deep, leaving the dead furrow where the ridge was in the last crop; and between the 15th and 20th of September, I spread a light coat of manure over the lands as they have been ploughed, and follow immediately with the seed, one and a half bushel to the acre, it having been previously steeped in brine of common salt twelve hours, then, four quarts of lime well stirred up amongst a bushel of wheat, and then add five or six quarts of gypsum finely ground.

In this way of preparing seed I have not had smutty wheat in twenty years, and very seldom troubled with rust. The double harrow follows hard after the sower, (lengthwise of the furrow of course,) covering the seed, and mixing the manure with the earth, before it has time to dry or waste with the wind or sun; cross harrow as before; pass over the roller, open the dead furrows and otherwise ditch if necessary, so that the water, in the spring of the year will run off readily. Crop of wheat from ten to thirty bushels per acre; average eighteen or twenty; cost of tilling and carting out manure, \$6 per acre. Early in March sow on the wheat twelve quarts of timothy seed, and four quarts of red clover seed to the acre. Early in May sow a bushel of gypsum, and at wheat harvest, the clover and timothy will, ordinarily, be a beautiful green rich verdure, an ell high, that would make a man smile if his head ached ever so hard. It may be pastured considerably, but not too late in the season.

Fourth year. Mow from two to three tons of hay per acre, average two and a half. Fall feed will nearly pay for cutting and securing the hay.

Fifth year. Mow again, average two tons. The fall feed again pays all expenses.

Sixth year. In May sow one bushel of gypsum per acre, and pasture the whole summer; it will afford a rich pasture, equal to two tons of hay, and be much better for the corn crops, which the next year, will again commence the rotation, than if the ground had been mown the last of the six years' rotation.

Perhaps I ought to give you a statement of my success, from year to year, in pursuing the course I so earnestly recommend; for it is a common remark among farmers, that the practical result is every thing.

The fifty acres I began with was a gift from my father, worth \$800. The timber was chiefly removed from forty acres of it. The old system of ploughing three or four times for every crop being in practice, and the stones not having been removed, much of the soil was exhausted by hard cropping. As I became able I purchased several small farms adjoining, at twenty-four or twenty-five dollars per acre, brought them under the above method of tillage, and have now a farm of nearly three hundred acres, two hundred and fifteen of it improved, lying together, which would now command about forty dollars per acre, and which yearly give the following results.

Products of two hundred and fifteen acres of improved land, lying on the line between Ballston and Charlton, part in each town—being for the year 1833.

Wheat 250 bushels at 8s. 6d.	\$297 50
Oats, 547 "	3 0 - - - 205 00
Peas, 55 "	5 9 - - - 37 81
Rye, 30 "	6 0 - - - 22 50
Wool, 658 lbs	4 0 - - - 329 00
62 Sheep being the increase of the flock, at	16 0 - - - 124 00
600 lbs. of Butter, and 240 lbs. Cheese,	105 00
Pork, 4,000 lbs. at 5 cents, -	220 00

Beef, 2,500 lbs. at 3½ cts.	\$87 50
Corn, 621 bushels at 4s.	312 00
Potatoes, 600 bushels at 17 cents, -	102 00
Cider, 50 barrels at 8s.	50 00
Winter Apples, 50 bushels, -	12 00
5 Veal Calves, at 20s.	12 00
Poultry and Eggs.	13 00
Rent of three out-dwelling houses on the farm,	73 00
Rent of the chief mansion house, &c.	100 00

2,182 81

Growth of colts will pay for the team.

Deduct for expenses below, - - - 558 62

Clear gain, - - - - - 1,324 19
Expended for feed, labor, seed, wear, and tear, &c.

208 bushels corn, fed to pork and beef, at 4s. 104 00

100 bushels potatoes to do and other stock, at 17 cents, - - - 68 00

200 bushels oats, fed to team and stock, at 3s. 93 75

24 bushels seed wheat, at 10s. - - - 30 00

35 bushels seed oats, at 3s. - - - 13 12

7 bushels seed peas, and 2 of rye, at 6s. 6 75

Seed corn, and plaster or gypsum, - - - 15 00

Wear and tear, including the mechanics' work, 60 00

Labor, one man at \$16 per month, as principal, - - - 192 00

Two boys at \$30 each, the summer, - - - 60 00

Taxes, - - - - - 20 00

Total expenses, - - - - - 858 62

The hands all board themselves.

The clear gain is more than 15 per cent. calling all the improved land \$40 per acre. The growth of the timber land will, at least, be 7 per cent. at the same price per acre.

Let no farmer, or farmer's son, rise from the perusal of the above plain, and unvarnished statement, and say he is

"Doom'd to tread the thorny ground,
Where few, he fears are happy found."

But let him feel and act as if agriculture, managed with system, and true economy, is the most profitable, most healthy, most honorable, and best calculated to raise our thoughts and aspirations of praise to that beneficent being who gives us wisdom to cast in the "appointed wheat, and vetches, and barley, in its place;" and let us honorably sustain the cause, by faithfully doing our duty, and we and ours will be blessed, and happy.

P. S.—Forgive the egotism, for one can scarcely speak of his own doings without it. A similar statement for the year 1832, lacks only \$9 87 of being 15 per cent at \$40 per acre. Respectfully, yours,

W. TAYLOR.

(From Goodsell's Genesee Farmer.)

CULTURE OF HEMP.

BY LEONARD E. LATHROP, ESQ.

Some farmers well informed in the business of practical agriculture, are of the opinion that hemp may ultimately become one of the most important and valuable exports from the interior of New England, as well as the western and southern States; and that it is as natural and valuable a staple, and every way adapted to our climate and soil, as cotton is to the climate and soil of the south. Some of them say that it will produce more pounds to the acre than cotton, and with much less manual labor; and will command in market, if properly prepared and handled, a price as great as the short stapled cottons, by the pound. And to induce our northern farmers to engage in it, it has been observed, that before the introduction of cotton into the interior of the Carolinas and Georgia, corn and provisions were, as they now are among us, a mere drug, utterly inconvertible into cash, even at a very low price; and that, as the intro-

duction of cotton there, raised the demand and the price, and made a ready market for grain, so that of raising hemp may in New England and the western States.

Could the introduction of hemp become the means of diverting, in some measure, the market of rye and corn from the distilleries, those engines of corruption, disease and misery, it certainly would be a valuable improvement to the condition of our country.

We now purchase great quantities of Russian hemp at enormous prices, for the calls of our commerce and naval establishments, because we have not, it is said, sufficient that is fit for use.

Our surplus rye and corn now go to the retailing merchants, a great proportion of it, and from the merchant to the distiller. But if hemp were introduced as one of the staples of our agricultural system, the growers of it would be in a condition to purchase much of the grain which is now sold for foreign merchandize, and to pay cash for it, which would better promote the interest of those who cultivate it.

As the culture of this plant has not been much attended to in the northern States, the following remarks, by a writer who appears to have been a practical farmer, are worthy of consideration. "This plant flourishes most in a mellow, dry soil,* and the richer the better. It affords little or no profit on lands of ordinary fertility. In soils naturally adapted to its culture, or in those sufficiently manured, it is one of the surest and most profitable crops, as the plant is subject to no disease, nor is it liable to be annoyed by any insect. Droughts do not sensibly affect its growth, and it is no danger of being destroyed by cattle.

From two to three bushels of seed are requisite to the acre, proportioned to the fertility of the soil, as in other crops.

The seed must be of the year next preceding, as it quickly loses its germinative powers.

A ton of hemp when dressed, may be raised from two acres of land, of the highest fertility.

It is believed that in this crop, as in almost every other, material benefit is to be derived from soaking the seed, in a solution, not too strong, of common salt, or saltpetre, or in a moderate ley of wood ashes, and then rolling the seed in gypsum, before sowing. The application of gypsum, as manure, after the seed is sown, is also beneficial, if the soil is suitable.

The ground should be harrowed before the seed is sown, as by that means the seed may be sown of a more even depth, that it may all start together; otherwise a part of the plants will outgrow and keep down the rest.

It should be sown as early in the spring as the ground can be put in proper order and sufficiently dry. In ordinary seasons in New England, it will be ripe for harvest about the first of August, the time for harvesting being indicated by the falling of the flowers, and withering of the leaves.

The male plants of hemp bear the flowers, and the female plants the seed. A sufficiency of the latter are to be left for seed, and those will require about six weeks further time to ripen, the ripeness being known by the seed turning brown.

The seeds may be gently beat off the stalks when dried, or they may be taken off by a coarse comb, made for the purpose.

It is said the female hemp which has stood to ripen the seeds, requires a longer time to rot than the male, and when dressed is harsher. It has been advised to sow some hemp thinly by itself for seed, and then the rest of the crop may be pulled or cut together.

* The editors of the Agricultural Encyclopedia, however, say that the soils most suited to the culture of this plant, are those of the deep, black, putrid, vegetable kind, that are low, and rather inclined to moisture, as well as those of the deep, mellow, loamy or sandy descriptions; and that the quantity of produce is generally much greater on the former than on the latter, but it is said to be greatly inferior in quality.

er. In grounds that are smooth the crop is cut close to the earth, by a kind of scythe, made for the purpose. The usual practice, however, is to pull it in the manner of pulling flax.

When it is sufficiently dried, which in good weather will be in about one week, it is to be gathered in bundles, bound with straw, and then carefully stacked up so as to be kept in a dry situation.

Many farmers practice rotting it in the winter, by spreading it on the snow, in the early part of winter, so that by being covered with other snows it will be bleached and improved in its color. When the snows dissolve in March, it will be found sufficiently rotted.

When sufficiently dry, it should be first broken with a coarse rake, and then with the common flax brake; and dressed in the manner of flax, but more gently, as it will waste with hard beating.

The crop may also be rotted in the fall, in a manner similar to that of rotting flax; or it may be water rotted like that crop. When water rotted, the hemp should be sunk completely under the water; and if it be stagnant, the hemp should be turned upside down, when about half-rotted otherwise, from the greater degree of heat on the surface of such waters than below, the upper part will be rotted before the under.

By water or winter rotting the coat of the hemp blacken much less than when rotted in the fall: and it is observed, that the warmer the weather, or the earlier in the fall the crop is rotted, the blacker the coat will be, as is the case also with regard to flax.

The crop of hemp should be harvested as soon as it is fit for the purpose, otherwise the male stalks will soon wither and blacken, after which the coat is of little value.

Hemp may be made a substitute for flax, for all common purposes. But in that case it is said it must be softened by steaming it over boiling water or ley, and beating it after it is dried again.

An excellent crop of wheat has been taken after a crop of hemp, and with very little expense.

The policy of introducing any new crop, to constitute a staple for market, should be adopted with caution. It has been remarked, that it might raise the price of grain, as did the introduction of cotton in the southern States; but it is certain that a ready market and a high price for grain, are indicative of the most prosperous condition of a country? It is not certain that a majority of the citizens of any country would always be ready to give an affirmative answer to this question. The great question respecting the policy of raising our own hemp for commercial and naval purposes, rather than purchase it of foreigners, must depend on the effect it would have on the price of labor. A very large portion of our citizens, who constitute an important part of the strength of our country, purchase their bread corn, for which they have to pay in their services only. The price of those services is not always enhanced in proportion to that of grain or butcher's meat. It should be a predominant object in the policy of our country, not to attempt the advancement of its general interest by means, which in their operation, tend to depress the condition of the poorer class of citizens.

(From the New England Farmer.)

FLESH COLORED CLOVER.

MR. FESSENDEN:

Boston, Nov. 28, 1833.

Sir,—I beg leave to introduce to my brother farmers the following extract from the Code of Agriculture, p. 433, as to the new and much celebrated species of clover.

"It is a subject of astonishment that this valuable plant (the *Trifolium incarnatum*) should not have been long ago introduced into this country (Great Britain) and cultivated on an extensive scale. If sown in autumn, after a crop of potatoes and other roots, it produces the next spring a crop fit to be cut

for soiling cattle eight days earlier than lucerne, and a fortnight before red clover. Care must be taken, however to have good seed, and not to sow it too deep. It produces two excellent crops in one year, the first of which should be cut as soon as it comes into flower, and the second will produce a considerable quantity of seed. From its early growth in spring, when other articles for feeding stock are so difficult to be procured, it is likely to become a valuable acquisition to British husbandry."

So far we have British authority, to which I beg leave to add, that it has been extensively used of late years in Germany and France, and with much higher commendation. It was the seed of this plant that the Hon. Thos. H. Perkins presented to the Massachusetts Horticultural Society, and therefore I feel it a duty to state my own trial of a pound of the seed sent to me by Col. Perkins.

I sowed it about the last week of April. It was in bloom and fit to cut in 50 days. It is not so coarse as Dutch red clover, better furnished with leaves, not liable to lodge or lose its leaves in drying. It furnished a fair second crop in the late uncommon dry season.

From its rapid growth I think it of great value for an early crop, for soiling in summer, or for supplying food when other grasses are winter killed.

It is only an annual grass, and therefore can be of no use but for these occasional purposes: but for milk farms to supply the market, or for small dairies on estates round great towns, I think it promises to be highly useful. I have requested my friend, Mr. Perkins, to import 50 pounds for myself and a friend, and he has ordered a quantity for himself, which are now on their passage. We shall be able to make a more extensive trial next summer, the result of which will be made known.

JOHN LOWELL.

(From the Louisiana Register.)

ROT IN COTTON.

Parish of East Baton Rouge. }

MR. ALEXANDER:

Jan. 1834. }

I observe in No. 31 of your Register, that a writer in the "Southern Agriculturist," has offered a solution to the often agitated inquiry "what is the cause of the rot in cotton?" I beg leave to differ from that writer in opinion. I believe it is caused by an insect perforating the boll. Some few years since my attention was drawn to this subject, and I became satisfied that the rot was caused by an ant;—in coming to this conclusion, I observed the bolls of the Tennessee, Alvarado, and the Creole black-seed cotton, growing in the same field. Each was equally perforated; but the hull of the Tennessee, which was three-fourths thicker than the Creole, could not be penetrated by the ant. By taking the bolls of each kind of cotton, and with a knife paring off the hull, or covering of the boll, the depth that the bill of the ant had penetrated might be easily traced. The hull of the Tennessee cotton, of the first year's growth, would not be perforated more than half way through; the Alvarado was not as thick, but sufficiently so to prevent injury: while the thinness of the Creole admitted the bill of the ant to the seed.

It is in wet seasons, when the growth of cotton is luxuriant, and fermentation easily excited, that we witness the greatest devastation. It is probable the ant may be found in all cotton growing countries, and equally abundant every year; but from some local cause, either from the peculiarity of the season, or quality and exposure of the soil upon which the plant is situated, the hull is more or less thick. It must be owing principally to the place or climate, as it is observed, Tennessee or Alvarado after being planted here a few years, are equally liable to the rot. On observing the thickness of the covering of the bolls of the Tennessee cotton of the first, second, and third year's growth, I found that in the latter year the hull was as thin as that of the Creole.

DOMESTIC ANIMALS.

(From the New York Farmer.)

The following communication is from a source that entitles it to much consideration.

Superiority of the Live Stock at the Albany Fair—Relative Merit of the Durham and Devon Cattle.

MR. FLEET:

I was highly gratified at the recent Cattle Fair, held at Albany, under the auspices of the New York Agricultural Society; and have great pleasure in acknowledging the politeness and hospitality of the respected President of your society, and other gentlemen concerned in your exhibition, which rendered my visit instructive and delightful. This, I was told, was a first attempt, and the weather was extremely inclement, the mercury, on Thursday morning, being at 14 degrees, and the winds high and searching; yet the success was such as to encourage future and persevering efforts. Such exhibitions have always been found, where judiciously managed, in the highest measure conducive to the advancement of the agricultural interests. There was wanting here, however, the powerful and animating stimulus of pecuniary or other premiums, which are not without their effect upon the most honorable minds, and which are particularly needed by those upon whom less interested motives can scarcely be expected to operate, to excite to a spirited competition.

The show of live stock was exclusively, though not intentionally, confined to the improved foreign breeds. I have had the pleasure of seeing the fine stock of John H. Powell, at Powelton, Penn. C. H. Hall, at Harlem, N. Y. Joseph Perry, at Hoosac, N. Y. James D'Wolf, at Bristol, R. I. T. Williams, at Chelsea; Samuel Jacques, at Charleston; E. H. Derby, at Salem; and Governor Lincoln, at Worcester, Mass. and single individuals of the improved breeds in various places, but never before saw so many collected, and so superior of their kind, as to convince the most sceptical of the extraordinary excellence of the stock; and to excite a strong sentiment of admiration of the enterprise, skill, and perseverance, by which such surprising alterations and improvements in the form, size, and condition, and general appearance of the stock, had been effected.

Among so many fine animals it might seem invidious, and in a stranger, perhaps improper, to particularize any individual animals; but a bull of twenty months old, belonging to Gen. Van Rensselaer; a cow belonging to the Patroon; one belonging Mr. Bement; a cow, a bull, and a yoke of oxen, belonging to C. H. Hall, Esq. were extraordinary fine animals. There were others, not perhaps inferior, but the names of their owners have escaped me. These were all of the improved Durham Shorthorn.—There was a pen occupied by a number of the Devon cattle, descendants of the stock formerly presented by Mr. Coke, of Norfolk, Eng. to Mr. Hurlbut, of Berkshire, Mass. which were exceedingly attractive and beautiful. The sheep and hogs, though few in number, were quite remarkable. The Disley weathers, and ewes, and swine also, from Mr. Thomas Dunn, of Albany, and the Southdown sheep, and the Berkshire swine, exhibited by Mr. Hawes, late of England, now of Albany, were very superior animals; and their introduction into the country must prove a great public benefit. If we suppose, with some persons, that these new breeds of animals are not superior to what we already possess, yet the mere exhibition of what may be done by systematic and skilful attempts to form or improve a particular race of animals by selection, crossing and combining, is a most valuable lesson to those who think well of our native stock and are desirous of its improvement.

The improved Durham Shorthorns have still strong prejudices to encounter in New England.

The butchers are almost unanimously opposed to them on account of their color, which is probably a mere prejudice; and because they say they do not prove well, that is, they have a small proportion of tallow. The farmers say, they require feed in proportion to their size; they are not suitable for the yoke; and they are inferior as dairy stock. How far these notions are well founded, time and further trial only can determine. Farther and exact observation and trial of them, in these respects, are extremely desirable; and we hope will be fully made.

Whatever may be said, or hoped for, in regard to them, it is certain that good keeping is absolutely essential, in order to have fine animals. Though it is by no means invariable, yet, in general, large animals require more food than those of a small size; and abundant secretions of milk are seldom combined with a strong disposition to fatten. It may ultimately be found, that as a race of animals, they will prove better suited to the luxuriant and fertile lands of the middle and western states, than to the short and stinted pastures of New England. I believe that the Devon stock will be found the best breed for us. I am not prepared, however, to speak with great confidence on this subject; for though my raised expectations have been sorely disappointed in several of the Short-horned cows that I have owned, many other persons within my knowledge have been more fortunate.

H. C.

(From the Farmer's Magazine.)

ON BREEDING HORSES.

By T. A. KNIGHT, Esq. of Downton, Herefordshire.

"Having introduced for the use of my tenants a high priced stallion, of the breed of the large London dray horse, I wish to state to agriculturists the grounds upon which I anticipate much advantage from the introduction of so large an animal. He will, I have reason to believe, be, when full grown, not less than seventeen hands high, and very compact in form.

"I conceive myself to have proved, by many experiments, of a part of which an account was published some years ago in the Philosophical Transactions, that the length of the legs of the offspring of all those animals which nature has intended to accompany their parents in flight, at an early age, is governed wholly by the habits of the female parent. This tribe of animals comprehends the horse, the cow, the sheep, and deer, and many others. If the female parent be of low stature, and descended from a breed of a similar form and size, the length of the legs of the offspring will be short, and will not be increased in length, though they will in strength, by any influence of its male parent, however tall and large that may have been; and the converse of this proposition will be found to be equally true.

"The experience of almost every farmer must have taught him that horses with drop shoulders and bodies, and capacious chests, are more capable of bearing hard and long-continued labor than those of which the shoulders, and of course the chests, are shallow and the legs long; but comparatively few know how rapidly the powers of draught of any animal mechanically decrease with the increasing length of the legs, comparatively with the depth of the shoulders and body. If a horse, proportioned as English horses now generally are, be sixteen hands high, his fore legs, measured from the elbow joint, will be about three feet, or nine hands high, and his shoulder about two feet four inches, or seven hands high. If such a horse be able to raise, by means of a cord passed over a pulley, a weight of a thousand pounds, another horse similar to that in every other respect, except that of having its legs eight inches shorter, would, on account of the mechanical advantage of its form, be able to raise twelve hundred and fifty pounds, or one fourth more, with considerable less exertion; for his power would increase with the diminished length of his legs, nearly in the same proportion as the power of

the weight upon the longer arms of the steelyards is increased by being made to recede from the point of suspension; and if the length of the leg of such horse, comparatively with the depth of the shoulder, were further diminished, its power would increase in an accumulating ratio. The enormous strength of a bull of mature age, affords familiar evidence of the truth of these positions; and I doubt much whether the offspring of a Norwegian pony, and a strong and low draught mare, would not be found capable of drawing a heavier weight up hill, to any considerable distance, than the largest horse of the ordinary form and proportion; whilst it would not, probably, exceed two-thirds of its weight, nor require more than two-thirds the quantity of food; and it would possess much more activity, and be much less subject to accidents. And I have good reason to believe that more perfect animals, for supplying mankind with food, may generally be obtained by cross-breeding from females of small, and male animals of large size, than from any breed of fixed and permanent habits, relatively to size."

HORTICULTURE.

(From the Magazine of Gardening & Botany.)
ON THE FORMATION OF KITCHEN GARDENS.

If there is one department of gardening more useful than another, it is that, the special object of which is the production and cultivation of those vegetables which contribute so largely to the support of man. The poor as well as the rich, the prince and the peasant, are alike indebted to this branch of horticulture for the larger and more wholesome portion of their sustenance; to all, a garden is possessed of a certain degree of importance, and all have an interest in giving to it as high a degree of cultivation as possible, in order the better to supply their wants. The culinary garden is of importance to the public, particularly in large cities; and where a proper spirit of improvement has been abroad, we will find their environs occupied chiefly by market gardens, which, independently of their furnishing the tables of the inhabitants with most wholesome food, afford an honest occupation and the means of support to a large class of the population: they are thus doubly beneficial.

Important as the formation of gardens is to those "who dwell in cities," it is not less so to the farmer. Every farm-house, every cottage should have a garden (larger or smaller according to the means of the owner) attached to it. The necessity of a garden, is not, I believe, generally disputed; I am aware that almost every farm-house has a garden of some sort; but there lies the difficulty;—it is in reality a garden of some sort, and unfortunately, not always of the right sort. The farmer generally appears to think a garden beneath his notice: he leaves the care of it "to the women"—an arrangement which would answer admirably well, if he would only provide the "woman" with the means of attending properly to the duty thus delegated to her. This negligence is prejudicial to the farmer's interests as well as to his comforts and enjoyments. The necessity of having a garden being acknowledged, the choice rests between having a good one or a bad one. A garden will always well repay the attention and labor bestowed upon it, provided that attention be properly directed and the labor rightly applied. An English writer* has the following remarks on the utility of cottagers' gardens, and the same will apply on a varied scale to the gardens of our farmers.

"Every house in the country," says he, "should have a spacious garden, as the land will thus produce more human sustenance than in any common course of agriculture. The usual garden plants cultivated, are potatoes, beans, peas, cabbage, French or kidney

*Pitt's History of Staffordshire.

beans, broccoli, savoys, turnips, carrots, onions, beets, spinach, lettuce, and many sorts of pot-herbs and salads. A garden should be well fenced, and sheltered from the north and east winds, and the hedge rows and corners should be planted with useful fruit trees. A laborer's garden should be from a quarter to half an acre. Those sorts of apples and pears which keep sound for a length of time, should be planted as well as those for present use; together with gooseberries, currants; and damsons, and other plums;—such articles would, in pies, be a cheap and wholesome food for children, and might, at times, turn to good account for sale. Suppose a laborer's garden of half an acre, thrown into two equal lots, the one for garden vegetables, the other for wheat alternately; let the garden lot be again divided into two, the one half for potatoes, the other half for garden vegetables. The whole might be cultivated with the spade and hoe, without loss of time, by doing a little every day, morning and evening; and in hoeing and weeding the wife and children might assist. By this plan, there would be one-eighth of an acre, potatoes, which might produce forty bushels; one quarter of an acre of wheat (drilled and hand-hoed) might produce eight bushels; and a hog might be kept from May to Christmas on the refuse of the garden and wash, and fatten after harvest with boiled potatoes and bran. The straw of the wheat would furnish the hog with litter, and manure for the garden would be produced. From these resources many family comforts might be derived," &c. &c.

In the hope of being useful in spreading the practice of gardening on just and true principles, I will offer some hints on the formation of culinary gardens, which I hope will be found useful not only to market gardeners and others, but to farmers and farmers' wives in the country.

As a preliminary, I beg leave to observe, that "whatever is worth doing at all is worth doing well." It requires but little more outlay either of money or labor, in the beginning, to make a good garden than to make a bad one, and it will cost less in the end. If there be any faith in figures, or truth in arithmetic, an article which will cost \$5, and last twelve months, is cheaper than one which costs but \$3 and will last but four or at most six months. So it is with a garden: make it right at first,—spare no labor nor expense to make it well, and it will endure; but if you begin wrong, or do the work negligently, you lose both your time, your money and your labor,* and will at length be obliged to begin all over again. I say nothing of the "vexation of spirit" which costs a man more than all the rest.

The first point is to make choice of a situation—provided, always, that a choice is to be had; for sometimes the situation of the house or some other circumstance, will take away that choice, and it will be necessary to "locate" the garden to suit such circumstances. But where a choice is to be had, it is of great importance to fix upon a favorable situation; for on that depends the prospect of luxuriant and profitable crops. It is even of more importance than choosing a rich soil; for if the soil be poor and the situation good, the former inconvenience may be remedied, but if the situation be bad, the defect is irremediable. The kitchen garden should be placed at the back of the dwelling house: but it should not be cooped up amongst buildings and outhouses of every kind, as is too often the case. Farmers generally will find it best to have their gardens adjoining their houses, as these are for the most part plain and simple; but in the country seats of the wealthy, where the principal dwelling has many offices, &c. attached, it will be an advantage to have the culinary garden

situated at some distance from the mansion house; it will not then interfere with the arrangements of the pleasure ground, which the proprietor will be more at liberty to dispose in such a manner as his tastes and circumstances will suggest, without neglecting or disparaging the more useful department.

In choosing a situation, due regard should be had to *shelter*; a certain degree of which is necessary; it renders the garden warmer and protects it from cutting winds, which are productive of much injury. Should the spot where the garden is to be placed be exposed to inclement winds from any quarter, no time should be lost in planting trees, which may afford a shelter from these troublesome visitors. Of course, as the object is to procure shelter as soon as possible, trees of rapid growth are obviously preferable. Care must be taken, however, not to run into an extreme and overshadow the ground by lofty trees; in planting the trees for shelter, therefore, it will be best to plant them at some distance from the boundary of the garden. Wherever a situation can be had, already protected by nature, it must not be neglected, for a natural shelter is always better than an artificial one: such natural shelter may be caused by the form or situation of the ground. But if recourse must be had to an artificial one, let it be attended to soon. The earth should be well trenched and trees planted immediately. The Sycamore or Buttonwood may answer very well, as it grows freely: poplars are of yet more rapid growth, but they are objectionable on account of their long straggling roots: if used at all, care should be taken that these voracious appendages do not interfere with the borders. To these may be added trees of slower growth and greater durability, as oaks and elms; the chestnut also may be introduced advantageously, as it would under such treatment attain a large size, and produce fruit of superior quality; which is certainly an object, when it often sells from \$3 to \$6 per bushel. It should be borne in mind, that the best shelter for winter is formed by evergreen trees, as they retain their leaves: a large proportion of them should therefore be distributed amongst the other trees, and when they have attained a proper size, some of the deciduous trees may be cut out, and if a few only of the finest of the latter be left at judicious intervals, the effect will be highly ornamental.

The distance from the line of the garden at which these trees should be planted, must be regulated by circumstances; at the south and east they should be as far removed as possible, to keep their shadows out of the garden during the winter.

One word more as regards these plantations; be sure, in choosing your trees, to give the preference to those plants which have been grown from seed, before those which have been raised from cuttings or layers, and above all, from suckers; the latter having always a tendency, (less or greater, according to circumstances,) to an irregular growth; whilst the former are more likely to assume the form of handsome trees.

This is a very general rule; but it applies in a special manner to evergreens. It is well known that if a cedar or a cypress lose its central terminal branch, it will never become a handsome tree, unless the cultivator can find a branch so situated as to take the place of the regular one; a matter sufficiently difficult. A plant raised from the seed, is a distinct individual, has its own proper centre and will grow accordingly; whereas all plants raised from cuttings, layers or suckers, are merely extensions of some pre-existing individual, and consequently, their growth is more or less modified.

I find I have rather overstepped my limits, and shall therefore, reserve the continuation of this subject for another paper, where I shall treat of situation in regard to altitude, aspect and soil, and probably also of the formation and laying out of the garden.

HORTULANUS.

Large pears should be tied up by the stock.

RURAL ECONOMY.

(From the New England Farmer.)

ON CUTTING WOOD FOR VARIOUS USES.

There has been much diversity of opinion relative to the time of the year most proper for cutting wood for timber or fuel. *Goodsell's Farmer* of the 26th ult. observes "that where durability is the object, timber should be cut at that season when there is least sap in it, say in February; but where it is for the purpose of clearing land, and the timber to be cut is of a kind likely to sprout, then it is desirable to have it cut when there is most sap in it, as that not only prevents the stumps from sprouting, but they rot much sooner than when cut in February."

The opinion of Mr. Goodsell is corroborated by a writer for the *New York Farmer*, in a communication re-published in the *N. E. Farmer*, vol. 10, pp. 237, 238. In this it is stated, "we do not seem sufficiently aware of the range of expansion and contraction of green and growing wood, or the extent of variation in bulk expanded and contracted by heat and cold. When occupying the least space the wood is of course most dense and compact, and it has then the least possible quantity of sap in it. More than fifty years ago my father had occasion for a barn floor, for use in winter, the British having been so managed that the farmers of the north could return to their farms, on doing which his was destitute of a barn floor. In the depth of winter, as the only alternative, he cut down—felled as the paper farmers say, large red oak trees, had them sawed into two and a half inch planks, and laid his floor, perfectly green, expecting to lay them over again when they got seasoned and shrunk as he supposed they would do. This was all done in the severe cold of a northern winter, and that floor has never yet been overhauled, nor have the planks opened a seam. The sap was all in its winter quarters in the roots under the blanketing of the muck, and of course could not be in the tree, which was compacted into the smallest possible space. The hoops of winter, in these days, were driven with tremendous force.

"From all these considerations, and facts, (I could cite multitudes of similar facts,) I come to the conclusion that the proper time to cut wood for timber is when the sap is least in quantity in such wood, and when this is least likely to lead to a fermentation. The more saccharine matter it has in it, the more likely it is to lead to this process, as well as generally, the more sap. The sugar maple, which abounds in this quality, if cut immediately after the growth of wood of the year and stripped of its bark, becomes even very durable as fence posts, if not set in thoroughly seasoned. The same is also true of hemlock; and several other kinds of wood, but they must be well seasoned, before set into the ground, as all fence posts should be. When wood occupies its least possible space, it is a good time to cut it both for fuel and timber."

The late Col. Pickering, in an essay on "The Felling of Trees for Timber," published in the *New England Farmer*, vol. 1 page 17, gave certain facts which led him to believe that "the best time for felling timber trees, for durability, was when their sap was vigorously flowing." Other writers, too numerous to be here quoted, have also recommended May and June, as the proper months for cutting down timber trees, where durability is the object. We will, however, quote another passage from Col. Pickering's essay above referred to.

"Accident threw in my way the late Oliver Evans' book on the construction of mills, to which was subjoined a treatise of a Mr. Elliot, a millwright, on the same subject. Turning over some of the leaves of this treatise, I lighted on the passage in which the author directed *hickory* timber, intended for the cogs of wheels, to be cut when the sap was running, that they might not become powder post."

* There is a French proverb which says, in substance that in the attempt to wash a negro white, you lose three things, viz. "your time, your labor and your soap." It is pretty much the same in working a garden originally formed on wrong principles.

Col. Pickering adverts to the case of "a farmer, the well pole (or sweep) of whose well happened to break at a very busy time, and to supply its place he cut down the first small tree, which came to hand; and this was a white birch. The sap then running freely, he put up his pole, and it lasted seventeen years. Had he put it up with the bark on, it would, probably, have rotted in a year; the closeness of the bark would have prevented the escape of the sap. A close coat of paint laid on unseasoned wood operates like the close birch bark, by confining the sap, and hastening the decay."

Dryness is favorable, and moisture unfavorable to the durability of timber. Green and growing timber has less moisture in winter than in spring or summer; but its pores being less open in cold than in warm weather, it cannot so well become dry before it becomes rotten. But in spring, summer, and perhaps the forepart of autumn, the pores of green wood are comparatively open, the moisture more easily exudes or escapes, provided said pores are not sealed by the bark. If one wishes to cut wood, and proposes to let it lie, without being deprived of its bark, winter is his time with reference to durability. But if it is proposed to strip the bark from the tree, the time when the bark peels most easily, will, we believe, be the season in which other things being equal, the timber will endure longest.

If it is wished that when wood is cut, the tree may sprout, and reproduce another cutting of timber or fire wood, it is best to conform to the practice of Gen. Newhall, of Lynfield, Mass. who observed as follows:

"Having woodland, from which I have cut, annually, for several years past, from twenty to fifty cords of wood, it has been my practice to have it cut at the *time* and in the *manner* that would best insure a strong and vigorous growth of sprouts. To effect this purpose, I never allow a tree to be cut till after the autumnal frosts have caused the leaves to fall, and the sap to descend to the roots, nor later in the vernal season than the month of April. The manner of cutting, is to leave the stumps nearly on a level with the surface of the ground, from which the suckers are much more strong and vigorous, and less liable to be injured by high winds, than a growth from stumps cut twelve or fifteen inches high, as is the practice of some.

"Pursuing this course, I have never been disappointed; and have now on land from which trees were cut in the midst of winter, a growth of sprouts, of the most vigorous and promising appearance.

"Respecting large trees, the growth of centuries, cut them at whatever season you please, there is scarcely one stump in a thousand that will produce suckers.

"In community where fuel is an expensive article, every proprietor of woodland should manage it in such a way, as not only to be profitable to himself, but, as shall preserve the growth for the generation to come."—*N. E. Farmer*, vol. 10 p. 9.

(From the New England Farmer.)

MANAGEMENT OF WOOD LANDS.

Few persons have any adequate idea of the importance of woodland to a country. Wood is not only useful for fuel, timber, tools, &c.; but without it the continent of America would be as barren as the deserts of Africa. Trees protect cattle and other useful animals from the burning rays of the sun, prevent or moderate the effects of heat and drought on the soil, produce moisture and vital air by transpiration of the leaves, regulate and soften the temperature of the climate, and are indispensable, not only to the comfort and civilization, but to the existence of human beings. A world without a sun, or an earth without an atmosphere, would scarcely be more intolerable or uninhabitable, than a country without trees.

A farmer might almost as well be without a wife, as without a wood lot. "In clearing farms in a new

country, due regard should be had to preserving a perpetual forest. Some have mistaken their interest so much, as not to leave a sufficient quantity of land uncleared; so that they are put to the disagreeable necessity, either of buying their fire wood, or else of going, perhaps, some miles after it. That part of a farm should be set apart for this purpose, which is least adapted by nature for tillage or grass. Land which is swampy with a very thin soil over a sandy bottom; land that is rocky and mountainous, or which will but poorly bear a dry season, or even the most sandy or gravelly heights, or steep declivities which cannot be ploughed, may answer well for a forest. Forest trees having long roots, some of which penetrate deeply, may find sufficient nourishment, in places where corn and grass cannot be cultivated to advantage. So that it is very bad economy, to suffer any such place to be destitute of growing trees. For if they do not produce wood, they are in a manner useless. Or, if they produce grass, trees will not hurt them for pasturage, but in some cases make it better.

"The quantity of ground that should be set apart for this use, must vary according to the largeness of the farm it belongs to, and according to the demand for wood, the quality of the soil, and the nature of the climate. If the climate be hot, the forest may be smaller.

"Some intelligent farmers in this country, have thought they could make a lot of ten or a dozen acres, answer the purpose of supporting one constant kitchen fire. But it certainly will not, unless the soil be uncommonly fruitful, and the trees be such as are of the quickest growth. If land be poor and dry, it will require twenty acres or more, to supply one single fire, and keep the stock of trees undiminished." It is, however, a very easy matter, by the use of stoves for cooking, and warming rooms, to effect these objects with one third of the fuel generally used, when Dr. Deane wrote.

In some cases, it may be found more profitable to keep tolerably good land in wood, than in any other cultivation. This will depend on the vicinity to some market town, or some place where wood can be sold at a good price.

To thicken a forest, or to prevent its becoming too thin, cattle should be kept out of it at all seasons.—The seeds or cuttings of trees of rapid growth, should also be set or planted in every part, which has become destitute of growing wood. If woodland be allowed to become so thin that the sun can get in and cause the ground to be covered with a sward of grass, this will prevent the further growth of young timber; and in this way the ground eventually becomes stripped of all its growth.

London's Gardener's Magazine remarks in substance, that the shoots from the stools or stumps of forest trees may either become crooked branches of little use except for fuel, or beautiful and straight timber trees, according as the old trees may be cut over close by the surface or one foot above it. The closer the stump is cut to the ground, the straighter the suckers or sprouts. This important fact ought to be familiar to every owner of a wood lot, and constantly kept in mind by the gardener in pruning fruit trees.

In applying the axe to a wood lot, which the owner would wish to perpetuate by a series of reproductions, the best method is to cut down every tree as far as you proceed. This will give the sprouts from the stumps, and other young trees the advantages of a free circulation of the air and a fair exposure to the sun. But if some of the large trees are left, the shoots which spring up from the stumps of the others will languish beneath their shade.

A valuable paper on the subject of forest trees, written by the Hon. J. Welles, published originally in the Massachusetts Agricultural Repository, may be found in the New England Farmer, vol. i. p. 329.

* Deane's New England Farmer.

(From the Vermont Chronicle.)

WINTER BUTTER.

Messrs. RICHARDS & TRACY.—With this, I hand each of you three samples of butter, made within two miles from your office, on the days following, viz. No. 1 on the third, No. 2 on the ninth, and No. 3 on the 17th of Nov. 1832.

Though I do not think I have ever chanced to see so good butter made at this season of the year, it is no vain or boastful desire that prompts me to exhibit these samples. My only object is to communicate, with your leave, and through your columns, to the public, what I consider as a discovery in the art of making butter, and to verify in part what I communicate, by an exhibition of the results of the experiments already made.

Without further introduction, I will state the process; and I hope it is not the worse for being simple. It is this—place the cream in an iron kettle, over a clear fire, bring it near but not quite to a boiling heat. In doing this, observe two things. 1. To stir the cream frequently, but not while over the fire. It more readily imbibes smoke when stirred than when at rest. 2. To skim off all the froth* that may rise while heating. After thus heating, stirring and skimming, remove the cream and put it into a stone churn, and set it away where it will not freeze, and let it remain till the next day. Then bring it towards the fire, and gradually and slightly warm it,—turning the churn around occasionally. It is then churned with a uniform and rather animated motion, but with no violence. The butter will appear in about 25 minutes after the churning commences. That was the time occupied, as we conjecture, in churning, on the said 3d and 9th of November. On the 17th the time, we know, was only 23 minutes.

You will observe that samples No. 2 and 3, are as yellow as June butter; and though the peculiar rich flavor of June butter may be wanting, still there is no bitter or unpleasant taste in either sample. Please to observe also, that Nos. 2 and 3 have a waxy quality and appearance, peculiar to good butter.

The reason why No. 1, though made earliest in the season, is not as yellow and waxy as No. 2 and 3, we conjecture to be this—that No. 1 was warmed rather too much at the time of churning.

I milked but two cows during the time mentioned, and was only able, after supplying our demands for milk, to set about 7½ quarts of milk each day for cream. I did not weigh the butter, but have no reason to suppose that the quantity was materially altered by the new mode of making. The cows were fed on frost-bitten grass, hay, and stalks with a small allowance of pumpkins or potatoes night and morning.

The cream churned on the 3d had not been frozen, but the grass on which the cow fed had been frozen. That churned on the 9th had been partially frozen, and that churned of the 17th had been all frozen.

A. B.

P.S. Nov. 22, 1832.—Since writing the above, the experiment of making butter by heating the cream, as above mentioned has been this day again repeated, with entire success. It is perhaps unnecessary to observe that, probably many things in the process described might be varied without injury, and perhaps with advantage. I conjecture that the secret lies in removing the froth.

FOR SORE THROAT.—Put a half pound of figs into a quart of water, and boil it to a pint—then open and strain the figs. Add two table spoonfuls of yeast, and the same quantity of honey. Gargle the throat with this liquid and the cure is certain.

* It may be that it is the froth which occasions all the trouble in the usual way of making butter in winter. If mixed with skimmed milk, this froth is said to make good "shortening."

MISCELLANEOUS.

HOUSE SERVANT'S DIRECTORY.

[We have recently received a small volume, of which the above is the gist of the title; the whole of which, though long enough for a preface, we give below. It purports to be a code of directions to house servants, written by one of their own profession. At all events the directions are excellent, and perhaps quite as useful and even instructive to most families who employ servants, as to servants themselves. Under this impression we have determined to make occasional extracts from the book for our miscellaneous page, and we begin with the author's introduction.]

The House Servant's Directory, or a Monitor for Private Families: comprising hints on the arrangement and performance of servants' work, with general rules for setting out tables and sideboards in first order; the art of waiting, in all its branches; and likewise how to conduct large and small parties with order; with general directions for placing on table all kinds of joints, fish, fowl, &c.; with full instructions for cleaning plate, brass, steel, glass, mahogany; and likewise all kinds of patent and common lamps: observations on servants' behaviour to their employers; and upwards of one hundred curious and useful receipts, chiefly compiled for the use of house servants; and identically made to suit the manners and customs of families in the United States. By ROBERT ROBERTS. With friendly advice to cooks and heads of families; and complete directions how to burn Lehigh coal.

INTRODUCTION.

In the first place, I shall address myself to my young friends Joseph and David, as they are now about entering into gentlemen's service, which they will find in course of time a very critical station for them to fulfil in its proper order; therefore I most sincerely intreat them to practice and study these few directions and observations, which I have laid down in the following pages, for their benefit and instruction, likewise for the benefit of those families which they may have the honor to serve.

Besides there are many young men who are in good situations at present, but who oftentimes are deficient of several of those branches that are requisite for a perfect servant to understand; I therefore have a sincere wish to serve all those who are in that capacity of earning an honest living, and perhaps are not perfect in the several branches of their business, which in this station they are expected to perform without being ordered by the lady of the family. There are many young men who live out in families, who, I am sorry to say, do not know how to begin their work in proper order unless being drove by the lady of the family, from one thing to another, which keeps them continually in a bustle, and their work is never done.

There is no servant that can keep from being in a state of confusion, that has not a regular rule for his work, and, on the other hand, how disagreeable it must be for the lady, who has to tell them every thing that she wants to be done. It was merely for this idea, that the author of this took in hand to lay before the public those general rules and directions for servants to go by, as shall give satisfaction to their employers, and gain a good reputation for themselves. And it is my most earnest wish to give to the utmost extent of my power, every instruction that is requisite for a house servant to understand.

Now, my young friends, you must consider that to live in a gentleman's family as a house servant, is a station that will seem wholly different from any thing, I presume, that ever you have been acquainted with; this station of life comprises comforts, privileges, and pleasures, which are to be found in but few other sta-

tions in which you may enter; and on the other hand many difficulties, trials of temper, &c., more perhaps than in any other station in which you might enter, in a different state of life. Therefore, my young friends, when you hire yourself to a lady or gentleman, your time or your ability is no longer your own, but your employer's; therefore they have a claim on them whenever they choose to call for them; and my sincere advice to you is, always to study to give general satisfaction to your employers, and by so doing you are sure to gain credit for yourself.

Now, Joseph, I am going to make a few observations to you.—In the first place, my young friend, the various stations of life are appointed by that Supreme Being, who is the giver of all goodness; therefore every station that he allows us to fulfil, is useful and honorable in their different degrees: for instance, we find from history and holy writ, that domestic servants have frequently been intrusted with matters of the greatest importance to their employers. Of this we have a memorable instance of your namesake Joseph, who was sold by his brethren to the Ishmaelites, and bought by Potiphar to be his domestic servant, and in this capacity Joseph acquitted himself with honesty and integrity, and his master saw that the Lord was with him, and that the Lord prospered all that was about him; and the Lord blessed the Egyptian's house for Joseph's sake. And he left all that he had in Joseph's care, and he knew not aught that he had, save the bread that he did eat.—Genesis, chap. 39th. I might mention in another instance, the fidelity of Mordecai, who, in his capacity as a porter to king Ahasuerus, saved that monarch from the violent hands of his two chamberlains.

Happy, my young friends, are those families that have servants who study the comfort and welfare of their employers, and who in return do the same by them! The kind admonitions of a good and affectionate mistress or master should always be listened to with respect and obedience, for the wise man saith, "As an ear-ring of gold, so is a wise reproof upon an obedient ear."—Prov. xxiv. 12. In the next place, my young friends, you may perhaps find a master or mistress who may act unkindly and unjustly towards you, as Laban did to Jacob his servant and son-in-law; but if you do your duty honestly and faithfully, depend on it that you will be more happy in your integrity than your employers can be in their injustice; for it is much better to be oppressed than to stand in the place of the oppressor; for patience is very acceptable in the sight of God, and in due time will be rewarded, because God hath promised that it shall be so; and when have his promises failed? Jacob's master shifted and shuffled him about for twenty years; and changed his wages ten different times, yet the Lord blessed the honest and upright servant, because he had done that which was just between his master and himself. Let those considerations, my young friends, ever stimulate your minds to truth and faithfulness, in all your situations through life, and God will guide and prosper you in all your undertakings.

I know there are many temptations to lead young men to their ruin; but you should be very cautious of what company you keep. How many young men in our station of life have come to their ruin by keeping bad company, and neglecting the business of their employers; so, my young friends, I tell ye to beware of all bad habits, such as drinking, gambling, swearing, telling falsehoods, and wasting your time when sent out on the business of your employers; for this is not your time you spend, but your employer's, for all your time belongs to them.

Remember, my young friends, that your character is your whole fortune through life; therefore you must watch over it incessantly, to keep it from blemish or stain; for without character it is useless to seek after any respectable service whatever. Nor can I wonder at ladies and gentlemen for the minute inquiries that they make, in every point, of a stran-

ger's character. How many instances have we all in our ears of masters being robbed by dishonest servants, and their very existence exposed to imminent danger through evil connexions being formed, unknown to them, by the inmates of their house. Remember also, that if you keep company with those whose character is not of the best, your character will be censured as much in a manner as though you were as bad as themselves; for our good Saint Paul says, that evil communications corrupt good manners; for the wicked favor the wicked, and the good favor the good; neither flatter any body, nor suffer any one to flatter thee.

There are a few more things which I shall caution you against. Remember always to govern thy tongue and passions, when thou art angry with any person; for anger will hurt you more than injury; and my kind advice to you is, never to be a slave to passion. Besides, the law of nature forbids us to do injury to one another; God hath given nothing to man which can be compared to reason and wisdom. Always strive to relieve those who are in distress, if it is in your power, for the christian religion not only commands us to help our friends, but to relieve our greatest enemies; for so we shall make them our friends; and shall promote love, and kindness, peace and good will among men. It concerns all men to help the miserable. It is the property of a little mind to flatter the rich; for flattery can hurt nobody but whom it pleases. The desire of riches, glory, and pleasure, are diseases of the mind; but the power of honesty is so great, that we should love it even in our greatest enemy. Virtue procures and preserves friendship, but vice produceth hatred and quarrels.

Now, my young friends, Joseph and David, I again for the last time most sincerely intreat you both to devote your attention to the following pages, in which I have laid down such rules and regulations for the convenience of your work, and the fulfilment of your several duties to your employers, as from my own long experience as a house servant in some of the first families in England, France, and America, will prove very beneficial to you and the public. Not that I mean to offer them as a fixed standard; because almost every family differs in the execution of their domestic affairs, and it is the duty of a good servant to do things in that way that his employers like best. But my idea of publishing this was for a general guide, and to afford an insight into matters connected with gentlemen's families; and I have always found those arrangements, which I have prescribed in the following pages, very satisfactory to those ladies and gentlemen whom I have had the honor to serve. But it is true, I have had many difficulties and trials of temper to encounter; but I have always viewed them as appointed by that Supreme Being whose goodness is ever bestowed upon those who bear every trial and difficulty with patience and obedience.

My young friends, I hope you will pardon me for dwelling so long on these subjects; but many, very many, have I known whose prospects in early life, and all their enjoyments, have been blasted by not attending to good advice. How many have we seen going about the city like vagabonds, diseased in mind and body, and mere outcasts from all respectable society, and a burthen to themselves, therefore I sincerely wish that my young friends may fulfil their several duties with honesty, integrity, and due respect to their employers and fellow servants in general; and I shall now conclude my general exhortations for your welfare, and enter on the particular statements respecting your domestic duties, &c.

The following curious advertisement appears in the Portland Courier:

For sale, or to give away.—A good cow, about five years old, that sucks all her own milk, thereby saving the milk maid a great deal of trouble. She will be sold at a bargain if applied for soon, and hay enough thrown in to carry her through the winter. Inquire at this office.—*Portland Courier.*

BALTIMORE PRICES CURRENT.

TOBACCO.—Seconds, as in quality, 4.00 a 5.00; do. ground leaf, 5.00 a 9.00.—Crop, common, 4.00 a 5.00; brown and red, 4.50 a 6.00; fine red, 6.00 a 8.00; wrappery, suitable for segars, 6.00 a 15.00; yellow and red, 9.00 a 15.00; yellow, 16.00 a 20.00; fine yellow, 18.00 a 25.00.—Virginia, 4.00 a ————Rappahannock, 3.00 a 4.00.—Kentucky, 4.00 a 8.00. The inspections of the week comprise 3 hhds. Maryland 44 hhds. Ohio, and 13 hhds. Kentucky—total 60 hhds.

FLOUR.—Best white wheat family, 6.50 a 7.00; 2d. quality, 6.00 a 6.50; super Howard street, 5.12½ a —; (wagon price, 5.00 a —); city mills, 5.00 a —; city mills, extra, 5.12½ a —.—**CORN MEAL**, for domestic use, 1.31 per 100 lbs.; do. yellow kiln dried, 3.00 per bbl. and 14.00 per hhd.—**GRAIN**, red wheat, 90 a 1.00; white do 1.15 a 1.20.—Corn, yellow, 55 a 56; white, 54 a 55; in the ear, — a — per bbl.; Rye, 65 a 66; chop rye, per 100 lbs. 1.50 a —.—**OATS**, 35 a 36.—**BEANS**, 1.50 a —.—**PEAS**, red eye, 60 a —; black eye, 75 a —; lady peas, 1.00 a —.—**CLOVERSEED**, 4.50 a 5.00; **TIMOTHY**, 2.50 a 3.00.—**ORCHARD GRASS**, 3.00 a —; Tall Meadow Out Grass 2.50 a —; Herd's, 1.25 a —.—**LUCERNE** 37½ a — lb.—**BARLEY**, — a —.—**PLANSEED**, 1.25 a 1.50.—**COTTON**, Va. 10½ a 12; Lon. 13 a 14; Alab. 12 a 13; Tenn. 10½ a 12; Upland 11 a 12½.—**WHISKEY**, hhd. 1st p. 25 a —; in bbls. 24 a —.—**WOOL**, Washed, Prime or Saxony Fleece, 60 a 70; American Full Blood, 50 a 55; three quarters do. 45 a 50; half do. 40 a 45; quarter do. 37 a 40; common 34 a 37.—**UNWASHED**, Prime or Saxony Fleece, 30 a 35; American Full Blood, 25 a 30; three quarters do. 24 a 26; half do. 22 a 24; quarter do. 22 a 24; common, 22 a 24.—**HEMP**, Russia, ton, \$165 a 155; country, dew rotted, 6 a 7c. lb. water rotted, 7 a 8c.—**FEATHERS**, 37 a 39; **PLASTER PARIS**, per ton, 3.75 a —; ground, 1.37½ a —.—**IRON**, grey pig for foundries, per ton, 33.00 a 35.00; high pig for forges, per ton, 28.00 a 30.00; bar Sus. per ton, 85.00 a 90.00.—**PRIME BEEF** on the hoof, 6.00 a 7.00.—**OAK WOOD**, 4 50 a —; Hickory, 6.00 a —; Pine, 3.50 a —.

From the Baltimore American, February 4.

FLOUR.—The wagon price of Howard street Flour is uniform at \$5 per bbl. We hear of no sales from stores; some holders are willing to sell at \$5 12½.

Sales of several parcels of City Mills at \$5, full. The stock is now materially reduced.

GRAIN.—We have no sales of wheat, rye, or oats to report. A sale of a parcel of yellow corn was made from store to-day at 60 cents per bushel, on a credit. The wagon price of Cloverseed is \$4 50 a \$4 62½.

MONEY.—Money matters are far from being easy, and the immediate demands for cash are not supplied without difficulty.

FRESH GARDEN SEEDS—NEW STOCK.

The subscriber has now completed the gathering together, from various sources, of a very extensive and complete assortment of GARDEN SEEDS, which he ventures to recommend to his customers and the public as good in every respect. He is prepared to execute orders either for dealers or families at the most reasonable rates at which first rate articles can be obtained.

AGENCY.—He also acts as agent for the procurement of CLOVERSEED and various GRASS SEEDS whenever he has them not in store; also Agricultural IMPLEMENTS, Fruit and Ornamental TREES, SHRUBS, GRAPEVINES, &c. Orders for these ought to be sent immediately, accompanied by either cash, or directions to draw for it when the articles are shipped. He also attends to the purchase and sale of CATTLE and other domestic animals.

I. I. HITCHCOCK.

RED TOP OR HERDS GRASS SEED.

A supply will be received in a few days, price \$1.25 per bushel, by

I. I. HITCHCOCK.

WANTS A SITUATION.

A single man wants a situation as a farmer or manager to an estate, he is well acquainted with the various branches of farming, breeding and feeding of cattle and sheep, draining, ditching, &c. would prefer a situation where a large quantity of wheat can be raised. For further information apply at this office.

Baltimore, January 24, 1834.

A FINE JACK AND JENNY—FOR SALE.

I have the selling of a fine Jack and Jenny, which measure as follows, viz:

The Jack is of the extraordinary height of fifty-seven and a quarter inches, and was eight years old last spring. He was imported from Malta, by Mr. C. Thorndike, of Boston, and is unquestionably one of the largest and most valuable animals of the kind in the United States. Price \$500.

The Jenny is eight or nine years old, (not more,) is fifty and three-quarter inches in height, and a fine animal. While the above is the lowest price for the Jack. I will sell the two together for \$1000. Letters in regard to these animals (post paid) will be promptly answered. Either of the animals will be sold separate from the other, if desired.

I. I. HITCHCOCK.

American Farmer Establishment.

CLOVERSEED—AGENCY.

Those who want Cloverseed, shall, by inclosing to me the cash, have it selected with the greatest care and forwarded as directed. I do not at present keep the article, but will purchase it on commission with care and punctuality. This is a good time for procuring it.

I. I. HITCHCOCK.

TO THE PUBLIC.

J. S. EASTMAN, begs leave to tender to the public his grateful acknowledgements for their liberal encouragement to him during the twelve years he has been engaged in this city in manufacturing Agricultural Implements. He has been gradually extending his business from its commencement, and for the last four years, public patronage has been greatly extended towards him, which has induced him during the last season to increase his establishment by the erection of extensive shops and machinery, with the addition of steam power, and he is now prepared to receive orders for any machinery required in the agricultural line, it being his object to confine himself principally to the agricultural interest. He has on hand a general assortment of Implements of Husbandry, which he feels assured, are manufactured of as good materials and the workmanship as faithfully executed as any in this country. His patent Cylindrical Straw Cutters have stood the test of twelve years, and now about five hundred are in operation, and he challenges its superiority; all sizes, from \$30 to \$90, will be kept constantly on hand ready for shipment. Also Fox and Borland's Threshing Machine, which has thus far greatly exceeded his most sanguine expectations—he has put nine into operation during the last harvest, and each has given perfect satisfaction. Wheat Fans of superior workmanship—prices \$25, \$28 and \$35.

Being the first to introduce Gideon Davis' Improved Patent Ploughs in this city, and having an extensive demand for them, he confines himself more particularly to them than to any other kind, keeping always a full supply of them, with wrought and cast shares; yet he has a variety of other kinds that may be preferred by some persons. Every variety of useful farming implements will be kept constantly on hand, and he will take special care to have them manufactured by himself of prime quality.

SEED DEPARTMENT.

Having again taken the agency for the Messrs. Landreth, of Philadelphia, he will shortly be supplied with an assortment of their valuable Garden Seeds, which are already well known to the public. He has also a stock of Garden Seeds on hand, which may be relied on as genuine.

Likewise all kinds of Grass Seeds will be kept in store, when they can be procured of prime quality.

Orders for Cloverseed will meet prompt and particular attention, if accompanied by the cash, it being a cash article with very small profit.

He would remind the public that many articles which are rare and scarce, are often ordered when they cannot be furnished, and many communications are made to such establishments in which the proprietor can have no interest further than to afford such information to his correspondents as may be in his power, in such cases it is expected that the letters will come post paid.

N. B. It is the desire of the subscriber, in order to save trouble, to confine himself to a cash business in future, particularly in small amounts. J. S. E.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

FRUIT, ORNAMENTAL TREES, SHRUBS, &c.

SINCLAIR & MOORE, offer for sale at their Nursery, three miles east of the city of Baltimore, between the Philadelphia and Bel-Air roads, a very extensive assortment of Apple, Peach, Pear, Plum, Apricot, Cherry, Quince, Gooseberry, Currant, Raspberry, Strawberry, and Catawba; and other Grape PLANTS and CUTTINGS. Also, ornamental TREES and SHRUBS, among which are *Norus Multicaulis*, and Italian White Mulberry for feeding Silk Worms, Chinese Alanthus or Tree of Heaven, English Elm, Sugar and Silver Leaf Maple, Horse Chesnut, Madeira Nut or English Walnut, Silver Leaf Poplar, Tulip Tree, and a great assortment of ROSES and other Ornamental TREES and Shrubs, all of which are larger and more thrifty than any offered to the public heretofore by them—the season proper for transplanting has arrived, the senior partner who resides at their Nursery and Farm will take pleasure in showing to visitors their extensive plantations. If five hundred and upwards of Peach or Apple Trees are taken direct from the Nursery by one person, without packing, 20 per cent. will be deducted from the very low prices as named in Nursery Catalogue for 1834, just published, which see for further particulars; annexed to Catalogue are some useful instructions on planting trees, time of sowing seed, &c. to be had at the Nursery or Store, corner of Pratt and Light streets, gratis, where orders if left will be attended to with care and despatch.

Nov. 15.

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Editorial, Straw Cutting Machine; Fall Sowing of Garden Vegetables; Horticultural Society of Maryland; Corn Crop—Turnip Rooted Cabbage—Raising Pigs from Cuttings—Watson's Red Hybrid Rhubarb—Preserve your vessels—Hints to Housewives—Six Years' Rotation of Crops and its result—On the Culture of Hemp—Flesh Colored Clover—On the Rot in Cotton—Superiority of the Live Stock at the Albany Fair, Relative merit of the Durham and Devon Cattle—On Breeding Horses—On the Formation of Kitchen Gardens—On Cutting Wood for various uses—Management of Wood Lands—Winter Butter—To Cure Sore Throat—House Servants' Directory, or a Monitor for Private Families—Prices Current of Country Produce in the Baltimore Markets—Advertisements.

GENERAL

Agricultural and Horticultural Establishment:

COMPRISING,

A Seed and Implement Store, a General Agricultural Agency, and the Office of the AMERICAN FARMER, at No. 16 South Calvert street, Baltimore: in connexion with a Stock and Experimental Farm, Garden and Nursery in the vicinity.

✂ An extra number of the Farmer, containing a prospectus of the "Establishment," and a "Catalogue of Seeds," &c. kept for sale, shall be sent GRATIS to any person who shall by mail or otherwise furnish his address for that purpose.

AGENTS FOR THE FARMER.—All postmasters are requested to act as agents for the Farmer, and to require a strict compliance by subscribers with the terms, especially the third item. They are authorised to retain one dollar for each new subscriber, and ten per cent. on all other collections. The list of special agents is published in the Farmer every third week. (Terms next week.)

✂ DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, FEB. 14, 1834.

ATLANTIC AND MISSISSIPPI RAIL-ROAD.—We have appropriated a considerable portion of the present number of the Farmer to a subject not strictly within our plan, or rather, a subject to which we do not intend to devote much of our space generally. Internal improvement, however, both physical and mental, we deem secondarily to, and intimately connected with the main object of this paper, which is agricultural improvement; for this can never be so perfect without the latter, nor so profitable without the former, as when the three are combined.

It has frequently occurred to us, as a subject of some surprise, that in the ardor, not to say the mania, for the construction of canals and rail-roads in this country, so few (if indeed there are any) have proved worthless or unprofitable. It seems to us to go far towards proving, that, let them be made almost where they may, they are, under all disadvantages, still worth all they cost. They actually create value wherever they are made, sufficient to sustain them even as local highways. Such is now the fact with regard to the great Erie canal: even if it was to-day divested of its character of a great thoroughfare of western trade, it would still be found profitable to the state by the business alone that has been created by it in the country through which it passes. At length, perceiving the wonderful effect which the canals of New York had on the prosperity of that state, Pennsylvania engaged in the noble enterprise of diverting the trade (or at least a share of it) of the "great west" from the "big ditch" of her northern neighbor, through her fertile and well peopled domain to her commercial capital; and nobly is she contending for the prize. Maryland, in her turn, though inferior in extent and resources, has proved herself not wanting spirit in this grand contention for the golden apple of western trade. May she go on and prosper as she deserves. The Ancient Dominion is at length aroused; and she, too, is putting in her claims for the high prize. May she contend as nobly in this race with her northern rivals, as her sons are accustomed to do in those of the turf. And now another magnificent project is started, not inferior in any point of view that we can perceive to the most splendid of its predecessors: viz. the "Atlantic and Mississippi Rail-road," to pass through one of the richest sections of our country, to transport chiefly one of the most bulky productions of our soil to our south-eastern sea-board. See what has been the effect on the city of New York of the accomplishment of the immortal Clinton's plan! See the change, as by magic, on the queen-like Philadelphia, though she has only yet begun to feel the influence of the 720 miles of canal and rail-road destined to roll wealth like a torrent into her lap. Baltimore already feels the impulse, though less than 100 miles of her rail-road are yet in use. Judging from these results, what may not Norfolk and Charleston anticipate from the completion of the grand highways westward which are in contemplation?—to say nothing of the numerous cities and towns that are, and will be benefitted by their connection with the Atlantic sea-board. We most ardently hope that the means will not be wanting to complete each of these great works, and the thousand "laterals" that will be found indispensable to the perfecting of the main schemes. We subjoin the letter of Gen. Games, covering the copy of that of the Rail-road Committee to the President of the United States; and we most heartily concur with him and them in their views, not only of the utility and importance of rail-roads generally, but in the extraordinary value of that contemplated from west Tennessee to Charleston.

MR. HITCHCOCK:

Memphis, Tenn. Jan. 10, 1834.

Being indebted to the "*American Farmer*" much beyond the amount of my subscription, (herewith inclosed,) I think myself in honor and common honesty bound to contribute my mite, small as it may be, to the *head-work* of that best of our numerous periodical papers. I say *best*, because almost all others with which the country is inundated, are filled with *worn-out political essays* and "*incendiary squibs*," or with "*tales*" worse than useless. I therefore send you a corrected copy of a letter on the subject of a rail-road, which the authors have ventured to designate the "*Atlantic and Mississippi Rail-road*." I am not so unreasonable as to imagine that you will think of publishing so long a letter; but not doubting that you will see the propriety of making use of some parts of it, I have concluded to send it to you through the hands of a friend, with a request that you will read it attentively, and dispose of it as you may see fit. The author will feel obliged by seeing his views sustained, if indeed they are found to be sustainable; but even should it be otherwise—should those views be deemed erroneous, the author and his associates will thank you, or any other writer, to animadvert with the utmost freedom on any *supposed* error of theirs: for, if really wrong, they are more than willing to be *put in the wrong*, and to suffer all the pains and penalties to which they are justly liable for their errors, however inadvertent, as they surely are.

In desiring your attention to this rail-road matter, I take leave to repeat to you what I have often said in my various public and private addresses upon the subject:

Fortifications, expensive as they always are, in peace and in war, are productive of little or no benefit to agriculture, commerce, or the mechanic arts, in a state of peace. Rail-roads, on the contrary, such as the one under consideration, are calculated, in peace and in war, not only to relieve agriculture and commerce of their heaviest burdens, but greatly to multiply their united blessings, by bringing into general use numerous articles of domestic and foreign growth and manufacture, which the great expense and the want of improved means of transportation have hitherto excluded from at least nineteen-twentieths of the agriculturists of the western, southern, and middle states. And while this valuable species of internal improvement gives to the industrious mechanic constant employment, good wages, and sure pay, it cannot but tend to convert thousands of the idle votaries of tippling shops and gambling places into useful citizens, who now, when they are asked why they spend all the day in idleness, reply, "No man hath hired us." The rail-road contractor will relieve them of this excuse; and the time is not far distant when even these idlers, employed "at the eleventh hour," may, with the improved habits which their new vocation will give them, acquire the art of making rail-roads; and may contribute thus to extend the practical benefits of this noble art to every district and every parish of our country; and thus it will be seen, that, much as steam-power applied to the boats and floating palaces of our great rivers and lakes has contributed to the wealth and comfort of our hitherto interior and isolated millions of inhabitants, giving them salt and iron, sugar and coffee, scythes and hoes, swords and plough-shares, and many other indispensable necessities of life (taking the world as we find it) at half, and in some cases at less than half their former prices; the time is near at hand when the application of steam-power to vehicles of land transportation will do more, much more, than steamboats have ever done for the encouragement and protection of agriculture and commerce, by removing their evils and ineffectually multiplying their blessings, with those of the mechanic arts; and in time of war, they will do more for the defence of the country than our fortifications can ever do. EDWARD P. GAINES.

* See the Military Dictionary for a definition of *incendiary*.

MARYLAND HORTICULTURAL SOCIETY.—We notice at the Society's rooms, Patapsco building, this morning, four jars with finely preserved specimens of grapes, Catawba, Isabella, Constantia and Bland, grown and preserved in spirits by Robert Sinclair, Sen. Esq. Also a large Shaddock, (of the orange tribe,) measuring 133 inches in circumference.

FOX AND BORLAND'S THRESHING MACHINE.—A subscriber wants information concerning Fox and Borland's threshing machine, in all particulars (including price) which are necessary to be known by farmers before they can conclude whether to order them or not. Will Mr. Eastman, who manufactures them in this city, answer this call through the Farmer?

We sincerely thank our friend "Naboth" for his excellent communication on manures and manuring; and in the genuine spirit of the younger part of our species, having such a "taste" of a good thing, we can't help crying out for "more."

It is this kind of contributions thus detailing "the way" of doing things by practical farmers, that render an agricultural paper truly valuable. We repeat, that we shall be very much gratified in receiving other communications from the same source.

A BULL CHASE

Yesterday afternoon between 5 and 6 o'clock, the sober inhabitants of Chestnut street were startled with a general outcry of "clear the road!"—"there he comes!"—and on looking, sure enough he did come. A bull or an ox, about three years old, had taken upon himself the responsibility of promenading Chestnut street without an attendant, and he made clear work of it as far as he went. Near Fifth street the cloak of a gentleman, blowing out into the wind, attracted the attention of the animal, and he flew at it with a singular grace. The owner slipped the fastenings, and left the garment. After a single toss of the affair, the bull pursued his way downward, but was soon attracted by the comely appearance of a black man breaking coal. The beast rushed in upon the heap, making a glorious clattering with his hoofs. The regular coal breaker, however, not relishing a partnership in his business, dropped his hammer and withdrew from the concern. By this time, the shoutings of the citizens had infused a new fire into the veins of the bull, and he took up his line of march at a rapid gate. Hurrah, shouted the boys—"there he comes," said a woman—and on went the bull, bellowing like a "roaring lion," peeling it down the streets like a streak of lightning, his tail cocked right into the air like a flag staff, and his head flying about like a politician's, looking for the strongest side. Arrived at the brow of the hill at Front street, his coming was discovered by the numerous persons on board the steamboat at Chestnut street wharf.

"What's that?" shouted one.

"It's the veto," replied another.

"Stop him!" they all shouted; and they formed a bold front, to keep such an invader from the deck of the steamboat.

Meantime the animal came down the hill with a marvellous velocity—wheelbarrows and handbarrows were scattered like dust from his path—nothing obstructed his course—away he went at full speed, over ropes and hawsers, stretched along to fasten the steamboat—high above every let and hindrance, he cleared the whole at a single leap, and struck the Delaware, sixteen feet from the wharf. Landsmen and watermen, fishermen and butchers, then betook themselves to the boats to catch the handsome beast,—Jove himself never took a more beautiful form,—but all exertions were fruitless. On he went, master alike of his own pathway, in the water as on the land. He directed his course for Smith's island, and landed safe, where at the last report he was setting up his rest—"Lord of the fowl and the brute."

[U. S. Gazette.

AGRICULTURE.

ON MANURES AND MANURING.

MR. HITCHCOCK:

Some remarks on the subject of manures, which I find in the *American Farmer*, have induced me to use a part of this snowy morning, in preparing for your consideration, what follows:

Until a few years since, I had never seen a field manured broad-east, or upon which manure had been dropped for that purpose, with which I was not dissatisfied. The unequal manner in which the hauler and spreader had apportioned the loads to the surface to be manured, was not however quite so unpleasant to my eye, as were the effects of those inequalities upon the succeeding crop. In the spring of 1830, I determined to cover a lot of eight acres with manure, and that if it were practicable, without too much trouble or expense, the loads should be dropped at proper distances, and be afterwards applied equally to the whole soil. The only resources to which I can resort for extensive manuring, are litter from the woods after having been trodden by cattle, and bottom earth mixed with lime, thrown into very large heaps, and permitted to remain undisturbed for several months. The latter was the description of manure with which I intended to cover the lot, the soil of which was an exhausted light colored clay loam, on a subsoil of tenacious clay, in some parts of the lot yellow, in others red—the bottom earth was a very black sand, full of decayed and decaying vegetable matter. My project succeeded: after the spreading of the manure, the lot looked, as if it had been dyed or painted; its whole area had been treated impartially and alike, and from no part of it did its bright face peep out, either to grin at me, or show its own nakedness. It is unnecessary to say that there were neither sinks, hillocks, nor other unpleasant inequalities in the succeeding crop.

The plan was simply this: intending to apply a hundred wain-loads to each acre, I directed a servant to procure a pole twenty-one feet in length, and after he had cut a furrow along one of the edges of the lot, to lay off the whole piece of ground carefully by the pole, and run furrows parallel to the first one, throughout its whole extent; and after he had done that, to cross plough it at the same distances. When he had finished the ploughing, I knew that in each acre there were precisely one hundred equal squares, in the centre of each of which I caused the manure to be deposited.

These are some of the advantages which grow out of this plan of manuring. When the checking is finished, the farmer knows the quantity of land to be manured with almost as much accuracy as it could be ascertained by a chain and compass; he knows to a single load the quantity of manure required; he may know to a single day (except so far as accidents, bad weather, or ill-health of man or beasts may interfere with his operations) the time necessary to finish the work. Any other plan of broad-east manuring that I have ever seen or heard of, is "guess work" from beginning to end. Col. Taylor's is, perhaps, the best mode communicated to the public, but that is not entitled to a different name. My manure is dropped with as much regularity as my corn, and is spread more equally upon the ground, than any seedsman can distribute wheat, oat, or other small grain. The fact is, that the furrows which enclose the square direct the application of every shovel full of every heap—the spreader, from the first to the very last stroke, sees the surface to which the heap belongs, and can correct any bias of which he may have been guilty, before he leaves the square. The time consumed and labor employed in checking a field in this way, is of no comparative importance, for a ploughman, with an ordinary fleet horse-team, can in a few days lay off one of the largest fields in Maryland. My first experiment was so entirely satisfac-

tory, that from that time until the present I have spread manure upon my fields in no other way; and expect to pursue the same plan as long as I continue a farmer, which I hope will be as long as I live, for I desire to vex the soil until I am put under it.

I have heard many farmers say, that they had used lime as a manure without deriving any benefit from it, and I have no doubt of the correctness of their statements. I have used lime without being able to discover that it had any effect whatever; but the reason was, the soil did not lack that all important constituent, had no qualities upon which its chemical action could be beneficial, and was destitute of vegetable matter; but upon the very same earth, when subsequently manured as I have already stated, with bottom earth and lime, I found each load of nearly or quite as much value as would have been a load from the stable. I have used the same bottom earth without lime, but it was inactive, indeed worthless—I would not haul it for it. It is the marriage of the two; that makes them prolific. Marry lime to vegetable earth or vegetable matter (let the match be equal, of course I do not mean in quantity) on any soil, and the union will be followed, within less than nine months too, by a vigorous and healthful offspring. I have been careful in giving one bushel of shell lime to each wain-load of swamp mud or bottom earth; but I think the dose hardly large enough, for I notice that those spots in my fields which have robbed their neighbors of a portion of the lime that belong to them, send up uniformly a more vigorous growth. I prefer shell to stone lime, because the same amount of strength covers so much more surface. This remark, reminds me of a fact which seems somewhat inconsistent with the opinion expressed at the beginning of this paragraph. In the spring of 1827, upon as poor a piece of yellow clay as ever heard the squealing of a killdeer, indeed it had no soil at all, a cask of stone lime burst, and a good deal of it was scattered about the spot and permitted to remain there—the next spring, hearty red clover came up "of its own head," and occupied the place.

One of my neighbors (but a more industrious man, and a much neater farmer than I am) has, I am satisfied, within the last eight years doubled his crops by the use of lime. He has the lime spread upon his ditchbanks and grubbed in; after it has remained there a few months, the compost is carted upon his fields. A skilful calculator remarked to me some time since, that the effect upon Mr. D—'s last crop of corn, of the lime heretofore applied to the field, would repay him all the money he had expended (many hundred dollars I know) to procure the article for his whole farm. He uses shell lime exclusively.

A friend of mine, who I hope is now better employed, who was a man of general science and a practical and scientific farmer, exerted himself for thirty years to improve a poor sandy farm—by the method of manuring which I am about to mention, he effected more for it in the five years which preceded his death, than had been accomplished in the other five and twenty. From the shore of a salt water sound to which the farm was contiguous, he littered his farm-yard with sea ware. In the fall he laid off with a plough, the field which he intended for the next year's crop of corn, in trenches seven feet apart, twelve inches in width and six in depth. The plough traversed the same furrow until the trench was sufficiently wide and deep—its sides were made by the bar of the plough. Those trenches were then filled with sea ware from the farm yard, and stable manure; the latter placed in the bottom of the trench, and making from a tenth to a sixteenth part of the combination; the trenches were then covered with the plough, and upon the ridges thus formed, the crop of corn was drilled the succeeding spring. After the laying by of the corn crop, the field had a year of rest, after which the intervals between the corn rows were treated and used as the rows had been. The advantages of that manner of

manuring are manifest. Almost all the fertilizing properties of the manure which escaped whilst becoming decomposed, fed the crop—the bed of the manure was not broken open, nor was it exposed to evaporation, until the soil had become "seized in its demesne as of fee" of all its treasures, save those which had already produced food for man and beast—a few manurings in that way, will make a very poor field of any susceptibility rich.

Fearing that I may tire you and your readers, I take leave with the new-year's greeting of friends in Scotland: "many returns of the season to you, Mr. Hitchcock, and a happy new year."

NABOTH.

(From the Southern Agriculturist.)

ACCOUNT OF THE CULTURE OF A CORN CROP.

DEAR SIR:

Vicksburg, Aug. 30, 1853.

According to promise made you in a former letter, I now endeavor to give you the mode pursued by me this season with my corn crop. My new ground required an uncommon deal of labor to put it in good order. It had formerly been covered with cane, it had gone to seed, died, some fallen down, and in this state was set on fire, the burn was not a good one, in consequence of which after gathering the broom, and cane of any size, rolling logs, &c. I was compelled to rake over the whole ground with hand rakes, which left it in beautiful order. I commenced planting on the 5th day of April, having previously bedded up half of my cotton ground. I laid off the rows five feet and a half apart with a jumping plough (with shovel-plough coulter before-shovel.) Planted my corn nearly a half bushel to the acre, covered with the same kind of ploughs, by running one or two furrows each side of the rows. I ploughed it, worked and thinned it when about three weeks old; chopped out the weeds and grass once after, and will make forty bushels to the acre. I began to bed up the balance of the land I now have in corn, and break out baulks on the 11th day of April, rows laid off five and six feet apart, and on the 14th day of May, I commenced planting corn, by running a shovel plough in the water furrow; planted about the same quantity of seed, and covered with a Carey plough. Thus planting below the surface, having most of the best soil above. I never saw corn come up of a fairer color or more regular, and of course an elegant stand. I commenced ploughing, thinning and hoeing on the 28th of May; in fact, very little hoeing was now necessary. Put the corn in first rate order, leaving the stand from two feet to two feet six inches. I ploughed and worked over again; commencing June 15th, and gave the last working, except a small part that I had chopped out, wishing to leave it perfectly clean, intending to sow timothy in the fall. This is decidedly the best corn I have seen, it receives the praise of all who have seen it, standing the drought which you will see by my former letter, was from May 29th, until July 15th, with occasionally light showers. The distance, I think, of much consequence, corn bearing heavier and better fodder. I may say that this corn had scarcely a dry blade, and as to "firing," nothing like it; nearly every stalk has two good ears, and ought to turn off more than forty bushels to the acre—very good for late corn. The surface of the land is now perfectly level, having ploughed down the beds thrown up. This is the mode much practised in the lower counties, and I understand with general satisfaction. So far as this crop will go, I can say, I give a decided preference to it. Corn in uplands is generally much "fired," whereas mine was green to the bottom, and with the exception of a very small part, (a poor hill side,) not even a blade was twisted, and even this recruited every night. Yours, &c. M. W. P.

* I gave this piece the last chopping out on the 7th of June.

(From Goodsell's Genesee Farmer.)

RUTA BAGA.

Mead Atwater, of Brighton, has called at the office, and communicated to us, verbally, his success in cultivating the ruta бага, the past season.

Mr. Atwater, informs us, that he sowed the seed about the middle of June, on seed beds, and when the plants were a suitable size, transplanted them out at suitable distances. The plants were afterwards hoed, and kept clear from weeds. At the proper season for harvesting he went over the ground with a sharp garden hoe and struck off the tops which he afterwards gathered up with a rake. He then with a dull hoe pulled the turnips out of the ground. The produce he thought was at least one thousand bushels per acre, and the quantity as fine or finer than those which had been allowed to stand where they were sowed.

Mr. Atwater, expressed himself in favor of transplanting, instead of sowing the seed where they were to grow for the following reasons—That it saved once hoeing, which he thought more labor than to transplant them. That the ground might be ploughed at the time of setting and would continue in better condition for maturing the crop than when ploughed earlier in the season.

(From the New York Farmer.)

SKINLESS OATS.

At the meeting of the Warwickshire Agricultural Society, a specimen of the *Avena Furina*, or skinless oat, was produced by the Rev. Mr. Knott, which had been plucked that morning out of a piece of ground belonging to that gentleman, at Wormleighton. It was produced from seed furnished to him from Mr. Trucker, of Heanton Punchardon, near Barnstaple, Devonshire. According to the account furnished to us by that gentleman, it was grown in the season of 1830, for the first time it was ever produced in Great Britain, by Thomas Derenzy, Esq. of Clebemon Hall, who obtained the seed through a friend of his at Rotterdam, whether it was imported from Shantag, a remote district in China, and was quite unknown to Europeans till within these three years. The advantages which this extraordinary and valuable grain possesses over all other kinds of oats are numerous, viz: When thrashed from the sheaf, it is exactly like oatmeal, and it is fit for immediate use for culinary purposes, and every other sort which oatmeal is consumed for, the grain being quite free from every particle of rind or husk. The flavor is delicious, and it contains much more farinaceous matter. There is, of course, considerable saving of oats, and expense of kiln-drying, sifting, &c. &c. and one peck of it contains more nutritious food for a horse than three pecks of common oats. The produce is most astonishing, the average being twenty-six barrels; of fourteen stone, to the Irish acre—the exact quantity grown by Mr. Derenzy on one acre. It was not sown till the 4th May, 1830, and was reaped early in August the same year. It is remarkably hardy, and well adapted to this climate.

NEW ZEALAND FLAX. *Phormium Tanex*.

This plant stands the winter of England. In 1828 only 60 tons, valued at 2,600 pounds sterling, were imported from Sydney into Great Britain. In 1830 there were 841 ton, and in 1831, 1,062 tons. Its price in London is 15 to 25 per ton. The flax is prepared by the natives, and in strength and whiteness of fibre is superior to any analogous material.

TURNIPS TO THE ACRE.—Loudon, in his late tour of Scotland, says, the cultivation of turnips, in rows is carried to so high a degree of perfection in Scotland, that 30 tons of Swedish turnips are calculated on to the statute acre.

DOMESTIC ANIMALS.

(From the New England Farmer.)

MILCH COWS.

Pittsfield, Mass. Jan. 4, 1834.

Dear Sir,—In your paper of the 1st instant, is an article under the above head, taken from the *American Farmer*, who answers the question, "what breed of cattle is best for the dairy?" by recommending half blood Durham Shorthorns. He may be correct, for aught I can say; but you may judge, from the following account of three cows of *Native American Stock*, entirely free as I believe, from admixture with any of the foreign stocks, so much recommended.

I have made from these three cows between the 1st of January 1833, and the 1st of January instant, 535 lbs. of butter. One of the cows calved in March last, another in May, and a third in July. They have been fed *exclusively*, on grass in summer, and hay in winter, with the exception of a few pumpkins in the fall. My family consists of ten persons, and we use cream almost profusely in June and July; during the season of the smaller fruits, which I raise in great quantities, we consume at least the cream of one cow. The greatest quantity of butter made in one month, was in September, when it amounted to 107 lbs. The cows are all of them large, one *very* large, perhaps the largest in the county. She calved in March and upon the dry food of that season even made 484 lbs. butter in four weeks. My pastures in summer are very fine, and I keep them so by sowing them every spring with *unleached* ashes, fifteen bushels to the acre, which throws out a profusion of white clover. The soil is dry and gravelly. The extent of my pasturage is six acres divided into three lots, into which the cows are driven to feed alternately, and these acres afford an abundant supply until the first of September, when I let them in upon the rowen of my mowing lot. Besides, I have about half an acre of lucerne and tall meadow cat grass, which I cut and give them in the spring before they are turned into the pasture, and which, for the last two years has afforded them an abundant supply of food for twelve days, besides allowing the pasturage to be well grown for longer use. I water them regularly three times a day from a well, having no other means; and they are carefully littered in winter. So much for *Cows of Native American Stock*.

Very respectfully, E. A. N.

(From the Delaware Advertiser.)

SHEEP.

We have often, in the course of our agricultural life, had occasion to notice the destruction from disease, which has been made among sheep, particularly lambs, and with what marked indifference the loss of ten or twenty of these valuable animals was viewed by their owner, without a single attempt to inquire into a nature of the disease, or make one experiment to remove its cause. It is much to be regretted, that every farmer who attempts to raise sheep does not, by some means, put himself in possession of some information relative to diseases which are liable to invade the health of his flocks. We do not know a more ready and cheap source from which to obtain this information, than newspapers.

A late writer, upon diseases incidental to sheep, states that he has discovered the cause of a malady, (the cough,) which has, at times, made the most destructive havoc among our flocks. He derives his information from the carcase of a lamb, which he dissected, and found deposited in its lungs a large quantity of worms, which no doubt, were the cause of its death. The writer thus remarks:

"Feeling a lively interest in the prosperity of the sheep business in this country and having a flock myself, I have thought proper to communicate the fol-

lowing facts and observations to the public, with a view to excite inquiry and elicit information in relation to that disease which has carried off so many of these useful animals.

"Some time in February last, I looked at a flock of yearling lambs, (about two hundred in number,) belonging to J. R. which I had seen in the fall; at this time they were in a thriving condition. In February when I examined them, several had died and the remainder were very poor, and a general cough prevailed amongst them, which increased with a shrill sound, a dull and heavy appearance, and extreme emaciation. Some time after, I dissected a sheep of this flock, which had fallen a victim to this disease. * * *

"I laid the lungs open, and in the cellular substance of the lungs and in the bronchial vessels, there were a multitude of worms about as thick as a linen thread, and from one to six inches in length, exceedingly sharp pointed at one end, and that end of a chestnut brown color, the rest of it of a pale white color. In a day or two after, I dissected another sheep while it was yet warm, and found the appearance precisely the same, only that the worms were alive, in the other they were dead. I directed Scotch snuff to be given to the sheep which seemed to be diseased, on their food morning and evening, and tar and sulphur once a day. They appeared to improve in health immediately. The same application was used in a neighboring flock, and apparently with good effect. Whether it is a remedy for the disease I will not undertake to decide, as but one or two experiments have been made; but it may be deserving a further trial."

(From the New England Farmer.)

TYRANNY AMONG HORNED CATTLE.

It is a fact of some consequence to be borne in mind by every person who has any thing to do with a barnhold economy, that neat stock do not pay any regard to the rights of cattle, but every animal is a tyrant to the extent of its power, and a slave to the amount of its weakness and its fears. The right of the strongest is apt to be exercised by the higher orders, over the more puny and pusillanimous without measure or mercy; and some aristocratic animals appear to take as great delight in worrying and tormenting their inferiors, as if they belonged to the classes of bipeds, called emperors, kings, conquerors, &c. On this and other accounts it is important to give your stock plenty of room for feeding ground, racks, troughs, &c. The size of a barn yard should be large in proportion to the stock kept in it. A small yard gives the stronger animals a greater chance to gore and harass the weaker than if there was room for the latter to escape from the assailants.

"The spirit of domination," says an English writer "is so remarkably prevalent among horned cattle that I have a hundred times observed the master beasts running from crib to crib, and absolutely neglecting their own provender for the sake of driving the inferior from theirs. This is, much oftener than is suspected, the chief reason of that difference in a lot of beasts after a winter's keep. It is likewise a very common and very shameful sight, in a dairy of cows to see several of them gored and wounded in a dozen places, merely from inattention of the owner, and the neglect of clipping the horns of those that butt. The weaker animals should be kept apart; and in crib feeding in the yard, it is a good method to tie up the master beasts at their meals."

Dr. Deane observes, "there should be more yards than one to a barn, where divers sorts of cattle are kept. The sheep should have a yard by themselves at least; and the young stock another—that they may be wholly confined to such fodder as the farmer can afford them."

Why is a strong infusion of green tea an effectual poison for flies?

Because of the prussic acid it contains.

(From the Farmers' Register.)

TREATMENT OF YOUNG TURKEYS.

The principal remedy necessary in the first instance appears to be a stimulant, to counteract the extreme feebleness which attends young turkeys, more than other fowls, in the earliest stages of their existence; hence, a gram of pepper, &c. is usually administered as soon as hatched. But instinct, their infallible guide, it appears, has more successfully directed them to the wild onion, which is proved to be a powerful restorative to their natures, and in fact, a grand panacea to the race. When they are permitted to ramble, you will see them busily cropping the green blades of the onion, with much apparent enjoyment.

Small hominy made wet, with the addition of a portion of the wild onion chopped fine, or any other onion tops that can be procured, affords the best and most wholesome food they can have for several weeks at least, or so long as they are confined to small enclosures.

Last spring, I witnessed with astonishment the wonderful efficacy of this article of food on a large flock of turkeys, which had been daily and rapidly diminishing during the long rainy season in May.—The mortality ceased the first day after their change of food to the above mixture of hominy and onions; and in two or three days, their rapid growth and improvement was visible to every eye.

Turkeys are very fond of green food of any kind, particularly lettuce and cabbage, and by the time they have grown off pretty well on the onions, there is plenty of that sort of provision. Cabbage leaves, chopped and prepared in the following manner, may then be given them twice a day with good effect, morning and evening.

After the leaves are chopped, put them in tubs of water, to remain all night, and early in the morning spread the meal on boards before them: in the same way, prepare that for the evening, by times in the morning. Continue also to feed them on hominy, so long as they may require your care, and I venture to say that the good housewife, without uncommon accidents, will have no reason to complain of the want of a good dish, whilst turkey is in season.

With my best wishes for the prosperity of your valuable exertions in behalf of the general welfare.

I remain yours, respectfully, HASSINA.

(From Goodsell's Genesee Farmer.)

BEES.

MR. EDITOR: *Wheatland, Jan. 20, 1834.*

In July last I gave you an account of the experiment I was making with my bees, by introducing them into my garret. At that time I informed you that they had not only filled the hive, in which the swarm was placed, for the purpose of removing them into the garret, but had made large combs without the hive.

The bees continued to work well from the time I made my communication to you, (which was dated 29th of July, and published in your fifth number, page 34) until interrupted by cold weather. After the weather had become too cold for the bees to collect honey, they left the comb which they had built without the hive, and congregated themselves within, leaving the honey, quite unprotected. In December I took from without the hive, twenty pounds of the whitest honey I ever saw, and have no doubt, but next season, the bees will furnish three times that amount, of equal quality, as the quantity of bees have increased astonishingly without manifesting any disposition to swarm.

Thus far I am much pleased with the success of my experiment, and which I hope to give you some further account, another season.

I am, sir, yours respectfully,

RAWSON HARMON, JR.

(From the Bee Garden.)

INCREASE OF BEES.

The recent improvements in preserving bees will probably produce very great additions of honey, at a much cheaper rate. We still import honey from the Havana. The following we extract.

It is not to be expected that many will attend to bee-husbandry merely for the sake of pleasure, but profit may induce others to follow that employment during their leisure hours. Often has the industrious laborer or mechanic been relieved from embarrassed circumstances, by the toil and labor of a swarm of bees, when he could avail himself of no other mode of relief. Not only are bees of immediate profit to their owners, but were they encouraged to the extent of which the pasture of the United Kingdom would permit, they might become even a source of national wealth. It is estimated by persons of learning, that the pasture of Scotland could maintain as many bees as would, on an average, produce 4,000,000 pints of honey, and 1,000,000 pounds of wax. Were this quantity tripled for England and Ireland, the produce of the empire would be 12,000,000 pints of honey, and 3,000,000 pounds of wax, annually. The income that would thus arise from honey, at the very moderate price of 5s. per pint, would amount to £3,000,000 sterling; and the wax, at 1s. 6d. per pound, would produce £2,225,000 sterling, affording in round numbers, a total of £5,225,000 annually.—The rearing of the bees must, therefore, appear to be an object worthy of the consideration of all who feel an interest in the welfare of their country. As there are few concerns more profitable than bees, in favorable seasons, considering the small expense that attends them, I humbly beg leave to lay before my readers the following estimate. Suppose a person to commence with only two hives, which may cost £3 10s. sterling, and allowing each hive, on an average, only to double its numbers annually, they would increase as follows in a period of ten years—

1st year, 2 hives; 2d, 4 do.; 3d, 8 do.; 4th, 16 do.; 5th, 32 do.; 6th, 64 do.; 7th, 128 do.; 8th, 256 do.; 9th, 512 do.; 10th; 1,024 do.

At this rate, two hives would produce one thousand and twenty-four swarms in the period of ten years, which, at a very moderate calculation, would be worth £1 15s. sterling, each, so that there would be a clear profit of £1,792 sterling, for a little attention to the rearing and proper management of the bees, allowing the second and third swarms to pay for the hives, stools, labor, and incidental losses. It may be supposed by the above estimate that the seasons are favorable but allowing fifty hives to fail from various causes, there would still remain £1,700 10s. sterling, of clear profit. The years 1824 and 1825, were very favorable for bees, the latter was remarkably so. Almost every hive that year swarmed once, many of them twice, and a few even three times. When the store was collected, they weighed from 25 to 40 pounds each hive. Notwithstanding, I read in the public papers that honey to the value of £240,000 sterling had been imported into Great Britain in the course of this same year, 1825; a most extraordinary sum, and one which in my humble opinion might have been easily saved to the nation, if a stricter attention had been paid to the proper encouragement of our own bees.

BARKING DOGS.—By a very slight puncture on the side of the neck of a dog, a skilful surgeon can divide a nerve which controls the vibrations of the vocal cords, and thus forever prevent the animal from uttering his characteristic voice.

Why is coffee so seldom well made?

Because, 1st. The berries are over roasted, their proper color being that of cinnamon; 2d. The coffee is ground too fine; 3d. Not enough coffee is used; 4th. It is usually overboiled, by which means the bitter principle is extracted from the berries.

HORTICULTURE.

(From the New York Farmer.)

CULTIVATION OF SILK AT MANSFIELD.

DEAR SIR: *Mansfield Centre, Ct. Dec. 18, 1833.*

Yours of the 30th ult. has remained so long unanswered that you may think me indifferent to the subjects of your inquiry. Not so, sir; I feel a deep interest in the growing prosperity of our country, in its various and multiplied manufacturing establishments, which are constantly springing into existence, and in none more so, than in the production and manufacture of silk; none which presents in my estimation greater encouragement, both to the agriculturist and the manufacturer—none which promises fairer to become of extensive utility and profit to this country.

With regard to the cultivation of the mulberry and the growing of silk in this place, it may not be generally known that the business has been successfully prosecuted here for more than seventy years; but, though gradually increasing during this period, there has been but very little improvements in the method of conducting the business, or in the application of the raw material to manufacturing purposes, any further than the production of sewing silk and twist, and this almost exclusively confined to the labor of the family, upon the domestic spinning-wheel. But one thing has been abundantly demonstrated; that is, that the white mulberry is easily cultivated, and that the rearing of the silkworm, and the production of silk, notwithstanding all the particularity, minuteness, and mystery, with which the subject has been treated, and invested, may be profitably pursued, with but little more knowledge or care than is requisite for the successful rearing of pigs, or poultry. Shelter them from cold, storms and wind, and feed them when hungry, whether it be in a corn house, barn, cider mill house, or laboratory, built on purpose for the business, a profitable crop of silk may be produced. I would not by this remark be thought to undervalue enterprise and improvement, or to treat lightly particular attention to convenience and neatness in every branch of agriculture. I highly value all the associations and societies of the present day, formed for the advancement and improvement in knowledge of the mechanic and agriculturist; but describe to a person entirely unacquainted with the manner in which wool is produced, the animal which produces it, and inform him how this animal must be reared, fed, housed, and treated, according to the practice of some of our most wealthy and scientific farmers, its peculiar habits, and liability to disease in case of neglect, and he would be very apt to conclude, that, being unable to sustain the necessary expense, he might as well not attempt to rear an animal that required so much care and labor. So with regard to the rearing of the silkworm, there is reason to fear that the minute particularity and delicate attention to temperature, food, cleanliness, &c. &c. with which the subject has been treated by most writers, may have deterred many from engaging in it; but let them be told, and truly too, that without thermometer, hot house, stove-room, or laboratory, the silkworm may be, at the proper season, hatched by the usual warmth of the kitchen; and that with a rough board to lie on, and a corn house or barn to shelter them from wind and wet, guarded also from the depredations of rats, mice, and fowls, and well supplied with the white mulberry leaf, will produce a profitable crop of silk, they may be induced to try; and having once engaged in the business and found it practicable, may then attend to all the improvements which experience and sound wisdom may dictate. Many persons in this town, who have been for twenty or thirty years successfully engaged in the rearing of silkworms, should you talk to them about thermometers, hot houses, and laboratories, would not know what you meant; yet, I doubt not, a due attention to these may be profitable.

With regard to the manufacture of silk in this country, much is yet to be learned; but I consider the experiment as favorably commenced, and nothing more is wanting than that some of our enterprising and ingenious mechanics should give the subject that attention which its importance demands; and with such improvements in machinery, and the art of manufacturing, as I think the business susceptible, we may soon compete in this, as we do in some of our wool and cotton fabrics, with any portion of the world. I believe it to be a well established fact, that no part of the world now produces a better quality of the raw silk than that which is produced in this country. Since the investigation of the subject by a resolution of Congress, and the encouragement presented by the Legislature of this State, in a bounty upon the propagation of the white mulberry, and upon raw silk, the business has received a new impulse.

The Piedmont reel has been introduced, and with some improvement in the application of a stop motion, was the last season used to some extent, propelled by water and by horse power, as well as by hand, and our ingenious and industrious females find that, without any further instruction in this branch, they can, with the exercise of a little more patience than the old reel required, produce a much handsomer and more valuable article than by the former method. I have now by me a sample of a few ounces, reeled by one of our ladies, which I designed to have presented at the New York Fair, and which I think in every respect would compete with the production of any country. Thus far, then, I think we may safely say, we can and do succeed. We have also two small silk manufacturing establishments in this town, propelled by water power, in successful operation, at which single thrown silk, organzine, tram, and every kind of silk, is prepared with ease, by persons bred to the business. The machinery is made in the manner of the most approved English machinery. At these establishments all the silk raised in this vicinity, and reeled on the improved reel as before stated, finds a ready market. Some broad goods have been made, but the business seems not yet to be sufficiently matured to go immediately into the higher branches of manufacture, but must for a time be confined to the smaller and more common articles of silk fabrics. A great proportion of the silk now prepared at our factories here, is made use of in the manufacture of the Tuscan grass bonnets.

Having extended my remarks to a much greater length than I anticipated, I will mention as an apology, that having seen most of the publications on the subject which have been circulated in this country in answer to the call of Congress for information, and being well acquainted with the perfectly simple manner in which the business has ever been conducted here, I felt that a plain statement of facts, similar to those I have here given, was necessary, to counteract in some measure the influence of that scientific minuteness with which the subject was treated in those publications, and might be of public utility. Should it appear to you that I am correct in this opinion, you are at liberty to make such use of this communication as you may think proper.

Another subject of your inquiry is, whether silk worm eggs can be procured here, in reply to which, all I can say is, I have heretofore, when applied to, found it difficult in obtaining them, to any extent called for, and presume there would be none now. The price, from six to eight cents per thousand; and as they are attached to papers, those papers may be folded and packed in small boxes and sent safely to any part of the country by stage or otherwise.

When at New York, last spring, I purchased a small lot of the *Morus multicaulis*, for the purpose of introducing them into this silk-growing region. They flourished finely last summer, and if our winter climate does not prove too severe for them, bid fair to be an important acquisition to our silk growers. As I am frequently applied to from a distance for information

with regard to the value of cocoons, and of the raw silk, I will here state that we have not as yet any extensive reeling establishments, but from the success which attended the trial of the Piedmont reel the last season, I think there is encouragement to enter extensively into the business, and that probably, by another season, such preparation will be made as to afford a ready sale for cocoons, at a fair price, which is now estimated by the bushel—say \$2 50 per bushel, for fair, to \$3 00 for best. The worth of the raw silk depends much on its being reeled clean, level and fine. For the former I have paid the above prices for several lots which I purchased the last season, and for the raw silk have paid mostly from \$3 75 to \$4 00. Respectfully, yours, &c. ZALMON STOKES.

(From the New York Farmer.)

CULTIVATION OF PEACH TREES.

Washington City, Nov. 26, 1833.

Peach trees may be preserved, by good management, twenty, and probably forty or fifty years.—They are destroyed from north latitude forty to thirty-six degrees, by a worm which feeds on the inner bark of the tree, at its root. This worm is said to be the offspring of a fly of the wasp kind, which deposits its eggs in the bark of the root of the tree, while it is young and tender. The remedy consists in searching for the openings in the bark at the root, and taking them out. If this operation is repeated three or four springs, the worm never after can make a lodgment there. The bark of the tree by this time becomes so hard, that the fly cannot make the puncture, in order to deposit the egg, or if deposited it perishes. After the worm is cut out in the spring, draw the earth up around the body six or eight inches above the other ground.

Of all the fruit trees produced in this climate, none bears pruning so freely as the peach; indeed, it should be treated very much as the vine is. All those branches which have borne fruit, should be cut out, if there is young wood to supply their places. Proof—take a limb which has born two or three crops of fruit, and notice its produce; take another on the same tree, which has never borne at all, and the fruit on this last will be twice the size of the former, fairer and less liable to rot. In pruning, the branches should be taken or cut out of the middle of the tree: thus giving more air and sun to the fruit on the outer limbs.

The peach tree produces best fruit when the ground is not stirred about it while the fruit is on. When it has no fruit, it should be cultivated as carefully as a cabbage, or any other plant.

The above comprises the most important points in the rearing of peach trees, and good fruit; if attended to, I have never known them to fail,—and my experience has not been very limited.

I repeat what may, perhaps, be doubted, that the peach tree, if the worm is kept out of the root, will live, at least, twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession, not forgetting to draw the earth up as directed. Straw, chips, or trash of any kind, serve the purpose just as well.

Very respectfully, yours, &c.

R. H. B.

Bridgeton, New Jersey, Feb. 1, 1834.

A large poplar log which was cut and carted by Mr Peter Ladow, and sawed by Richard Hankins at Lawrence's Saw Mill at Dividing Creek, made 2,437 feet panel boards, 437 feet of scantling. It is supposed to have wasted by hewing 337 feet. The boards were sold at \$25 per thousand, which amounts to \$61—the produce of the whole log amounting to about \$70.—*Observer*.

A woman asked a doctor whether taking snuff was not hurtful to the brain. "No," said the doctor, "but he that has any, will never take snuff."

RURAL ECONOMY.

(From the Quarterly Journal of Agriculture.)

USEFUL INSTRUCTIONS REGARDING THE MILKING OF COWS

The operation of milking is performed differently in various parts of the country. In some, the dairy-maid dips her hand into a little milk, and by successively stripping the teat between her finger and thumb, unloads the udder. The plan, however, is attended with the disadvantage of irritating more or less the teat, and rendering it liable to cracks and chaps, which are followed by inflammation, extending to the rest of the quarter. This accounts for the disease occurring more frequently among the cows under the charge of one milker than it does in those which are under the charge of another; and, as this practice is more common in some parts of the country than in others, it also accounts for the disease being more common in these parts. This plan of milking, where the irritation is not sufficient to excite the extent of inflammation to which I have alluded, frequently produces a horny thickening of the teat, a consequence of the cracks and chaps, which renders it more difficult to milk than when in its natural state; and, at the same time, predisposes to inflammation, when any cause occurs to set it up. These effects may be, and are almost entirely avoided, by the more scientific plan of milking adopted in other parts of the country, where, instead of drawing down or stripping the teat between the thumb and fingers, the dairy-maid follows more closely the principles which instinct has taught the calf. (The calf jerks its nose into the udder, and forces down the milk.) She first takes a slight hold of the teat with her hand, by which she merely encircles it, then lifts her hand up, so as to press the body of the udder upwards, by which the milk escapes into the teat, or if (as is generally the case when some hours have elapsed between milking-times) the teat is full, she grasps the teat close to its origin with her thumb and fore finger, so as to prevent the milk which is in the teat from escaping upwards; then making the rest of the fingers to close from above downwards in succession, forces out what milk may be contained in the teat through the opening of it. The hand is again pressed up and closed as before, and thus, by repeating this action, the udder is completely emptied, without that coarse tugging and tearing of the teat, which is so apt to produce disease.

(From the New York Farmer.)

ECONOMY OF CUTTING HAY FOR HORSES.

It is stated in the publications of Great Britain, that the economy of using cut hay and straw, has been fully and generally tested, particularly by stage proprietors, who, in consequence of the powerful competition from steamboats, were driven to contrive ways and means to lessen the expenses of keeping their horses, without diminishing their efficiency. They accomplished their objects in the substitution of cut hay for long hay. Similar circumstances have compelled the owners of stage horses in this country to adopt the same course.

Mr. Reeside, one of the largest mail contractors in the United States, has, we are informed, adopted the plan with very great saving in expense, and with much additional performance by his horses. It was the admirable condition of his stage horses that led the superintendent of the streets of this city, J. M. Bloodgood, Esq. to make inquiries, and to adopt a similar course of keeping the horses belonging to the corporation of New York. On application to Mr. B. we were politely furnished with the following particulars:

The number of horses employed in carting street manure is generally twenty, and sometimes one or two more or less.

In six months of 1831, when the hay was not cut, the following quantities were bought for their consumption:

January, 4,400 pounds; February, 10,304; March, 2,240; April, 15,680; May, 6,200; June, 5,000.—Total 43,804 pounds.

In six months of 1833—January, 4,000 pounds; February, 5,000; March, 5,300; April, 2,000; May, 7,000; June, 5,000. Total, 28,300 pounds.

One bushel of cut hay is given three times a day, with four quarts of ship stuff, and two quarts of Indian meal, at each feeding. Oats are sometimes given once a day instead of hay and meal. Under this feeding, which may be considered pretty high, the horses, though they labor hard, are kept in much better condition than when long hay and oats were given. The present plan of feeding is considered to be a saving in expense at least one third.

One reason why the horses, on this system of feeding, are much more invigorated and in finer order, is that they are not obliged to labor all night in eating dry hay, but have time to obtain rest and sleep.

One thing is pretty evident—the time will soon come when cut straw and hay, packed in bags, &c. will be brought to this city from the "far west."

MISCELLANEOUS.

ATLANTIC AND MISSISSIPPI RAIL-ROAD.

From *Memphis, Tenn. Nov. 5, 1833.*

The undersigned, acting as a committee for and in behalf of a late Convention assembled at Bolivar, representing the people of Madison, McNairy, Hardeman, Fayette, Tipton and Shelby counties, of the Western District of Tennessee, have the honor of submitting to the President of the United States, the annexed copy of Resolutions entered into by the convention, expressive of their opinion of the *practicability, expediency, immediate local advantages and prospective public utility of a Rail-road* from the Tennessee section of the Mississippi River to the ATLANTIC OCEAN; to pass through the south-western border of the State of Tennessee, the northern parts of the states of Mississippi, Alabama and Georgia, to the Rail-road now constructing through the south-eastern part of South Carolina; leaving the Tennessee river, and most of its tributary streams, with the southern knobs and ridges of the great mountains of the Carolinas, Tennessee and Georgia to the north; and all the waters of the Yazoo, and most of those of the Mobile, the Appalachicola, and the Alabama, to the south—embracing for the location of the proposed work a section of country, which is believed to combine far more of the natural and essential advantages for the economical construction and permanent utility of a rail-road between the valley of the Mississippi and the Atlantic ocean, than any other section of the United States; from the northern lakes to the Gulf of Mexico: as north of this location, the mountains every where present an insuperable barrier to such a work, without the incalculable expense, and lasting obstruction of great and numerous *inclined planes* requiring *perpetual stationary steam power*;—while, to the south, the numerous large rivers, creeks, steep ridges, ravines and swamps, by which any such location in that direction would be intersected, afford reasonable ground to apprehend that the *expense* of a Rail-road in that quarter would be vastly greater, and its utility far less promising than it would be on the proposed site.

With these impressions, the Bolivar convention, after mature deliberation, passed their resolutions with an unanimity seldom equalled in so large an assembly, and upon a subject so much calculated to produce conflicting interests, and opposite opinions; from the 5th and 8th of these resolutions, it will be seen that the undersigned have been instructed respectfully to solicit the President to direct an officer of the U. S. Topographical Engineers, to make the

requisite surveys and estimates, preparatory to the commencement of the desired rail-road.

In compliance with these resolutions the undersigned deem it to be their duty to submit for the consideration of the President, a general outline of the views of the Convention, with the principal grounds upon which their resolutions were based.

1. Experience has proved that the whole extent of the country embracing the location of the proposed rail-road is a *cotton growing country*—that it is for the most part but just now emerging from the primitive condition of a wilderness, to the infant state of civilization and agricultural improvement; that although most of the country bordering on the proposed location is unsurpassed in the southern states, in point of health, excellence of water, and purity of atmosphere, and much of it equal in fertility of soil, to any of the uplands south of Kentucky, yet there is not in the United States a section of country (save the valley of Holston, S. W. Virginia, and East Tennessee,) so much altogether out of the reach of the benefits of steamboat navigation, or good roads leading to profitable markets, as a great part of the country embracing the proposed location; and particularly that section lying between the Muscle shoals in North Alabama and Athens in Georgia; near the first of these points a section of Rail-road of twenty-five miles has been undertaken, and is to be completed in the present year, by an efficient company of the citizens of Alabama, between Tusculumbia and Courtland; and they have contracted for extending it in the ensuing year as far as Decatur, a distance of 45 miles.

It is believed that the proposed rail-road will not only contribute largely to the agricultural and commercial interests of the particular sections of the states through which it is intended to pass, but that it will be found to be the basis of a system of rail-roads, from the salubrious valleys of the south-western parts of Virginia and East Tennessee, that will very soon rescue the people of those delightful valleys from the *commercial bondage* to which the want of good roads has continued to subject them, ever since the dawn of our national independence—notwithstanding the heroic part which they took (at King's mountain and other places) in that glorious achievement, entitled them to that full participation in the fruits of their country's triumph, to which good roads and profitable markets are ever indispensably requisites:—for there are many points in the northern sections of Alabama and Georgia, at which lateral rail-roads leading from the valleys of Holston and Tennessee may be advantageously connected with the "Atlantic and Mississippi rail-road," where every desirable article of foreign growth or manufacture, will, when that work is accomplished, be obtained on nearly as low terms as at our largest sea-ports; and where all the surplus produce of these rich valleys, as well as those of the western counties of the Carolinas, will find a ready market. The unrivalled *iron, and wheat, and butter, and pork, and beef*, of the valleys of Holston and Tennessee, from Wythe to Buncombe, and from the mountains of Wilks and Rutherford, N. C. to the plains of Highwassee, Tenn. will find on the "Atlantic and Mississippi rail-road" a cash market at higher prices than they have ever hitherto been able to obtain.

2. Experience has proved that throughout the most fertile regions of this country, and more especially on the western section of the proposed "Atlantic and Mississippi Rail-road," the alluvial and loamy nature of the soil, render it impracticable during the greater part of the winter and spring, for a carriage to move upon our ordinary roads with any thing near what would in most of the Atlantic States be deemed a *reasonable load*. The consequence is that in periods of wet weather, and generally during the busiest season of hauling our crops to market, the expense of land transportation over our present roads, often amounts to from three to six cents a bale per mile; whilst the customary rates of rail-road transportation

seldom exceeds half a cent a bale per mile. Assuming as the average of land transportation for the middle sections of the proposed route at four cents a bale per mile.—and half a cent a bale per mile as the average of rail-road transportation; and supposing the present year's crop of seven counties of North Alabama, principally above and adjacent to the Muscle Shoals, estimated at 87,000 bales, (a great part of which is now unavoidably withheld from an unusually promising market, for want of a Rail-road, or navigable water) is conveyed 59 miles to steamboat navigation on the Tennessee river, where it may remain for months before a sufficient rise of water for its shipment to New Orleans occurs:

The Land transportation	
would be	\$174,000 00
Thence by steamboat via the Tennessee river to the city of New Orleans, at 2 50 per bale	217, 500 00
Total amount of transportation of 87,000 bales of cotton from the seven N. E. counties of Alabama by land and water to New Orleans,	\$391,500 00
The Rail-road transportation of 87,000 bales 200 miles—from Decatur, Alabama, via Tusculumbia to Memphis, Tenn. at half a cent a bale per mile would be	87,000 00
From Memphis to New Orleans, by steamboat 87,000 bales at 1 50 per bale would be	130,500 00
Total amount of expense of transportation of 87,000 bales by the proposed Rail-road, via Memphis, and thence by steamboat to New Orleans	217,500 00

Deduct this amount 217,500 00 from 391,500 00, leaves	174,000 00
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By which it appears that the proposed rail-road would save to the planters of seven of the N. E. counties of Alabama alone, the sum of one hundred and seventy-four thousand dollars, amounting to upwards of \$24,300 00 to each county, on the article of cotton, in one year. And this amount would be inconsiderable compared to the advantages that would result from the planters being able to forward their cotton to New Orleans, or to an Atlantic sea-port, while the price happens to be, as it now is, 5 to 6 cents in the pound higher than it usually has been for some years past:—for example—it was in November 1832, but 10 cents per pound—87,000 bales averaging 400 lbs. a bale, is 34,800,000 lbs. at 10 cents (the price in November 1832) amounts to the sum of \$3,480,000 00

87,000 bales 34,800,000 lbs. at 15 cents the pre-ent price (in November 1833) is	5,220,000 00
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Making a difference of	\$1,740,000 00
The amount thus saved to the planters of the seven N. E. counties of Alabama in one year of the proposed Rail-road transportation as above estimated, would be	\$174,000 00
To which sum, add the amount gained by being promptly at market before the price falls from 15 cents the present price, to 10 cents, the price of the last year,	\$1,740,000 00

	\$1,914,000 00
Total amount saved to the planters of the seven N. E. counties of Alabama in one year, estimated at one million nine hundred and fourteen thousand dollars:	

Thus securing to each county, the sum of \$273,428 00 per annum.

These estimates are based upon data derived from unquestionable sources, the correctness of which, the undersigned feel assured will be vouched by the Representatives in Congress from the Northern Districts of Alabama, and the Western Districts of Tennessee.

It is believed that twenty of the counties embracing the proposed location, and forty of the adjoining counties within thirty-five to forty miles of the intended Rail-road, will, by the time of its completion, or within five years of this time, afford an annual product of at least 10,000 bales to each county of five hundred square miles—making a total of 600,000 bales. The Rail-road freight of which, supposing the one half of it is taken to *Augusta, Charleston or Savannah*, and the residue to *Memphis*, may be estimated as averaging \$1 50 cents per bale, will amount to the sum of \$900,000. These 600,000 bales of cotton at the present prices of freight by land and water, varying according to distance, the state of the roads, and the navigation of the rivers, from two to six dollars a bale—taking, however, four dollars as the average expense of transportation of a bale, it will amount to \$2,400,000; from which, deduct the Rail-road freight of \$900,000, there will remain \$1,500,000 the amount saved in one year; a clear gain to the cotton planters of the sixty counties referred to, in the expense of transportation of cotton alone. If to this sum is added the amount gained by placing it in their power to go promptly to a good market in *any* and in *every week* in the year—to say nothing of the amount gained by the saving of *time*, and of incidental expenses, it is more than probable that the planters of these sixty counties would often realize in the course of one year, an amount but little short of the whole cost of constructing the Rail-road, as will be seen by these estimates. To the above may be added, the surplus marketable productions of the valleys of *Holston, Clinch, Chucky, French, Broad and Tennessee rivers*, with those of the western borders of North and South Carolina, and the northern parts of Georgia and Alabama. These valleys are deemed to be capable of furnishing for market in any one year after the commencement of Rail-roads, affording the means of a cheap conveyance to choice markets, the articles stated in the following estimate, and to increase the supply of most of these articles at the rate of ten per cent. per annum for the next ninety-nine years, the term of the charter granted by the State of Tennessee, viz:

Rail-road Freight.

500,000 tons bar iron, pig iron and eastings, at \$5 per ton,	\$2,500,000
600 tons crude nitre	5 " 3,000
75,000 bbls. tobacco,	3 per bbl. 225,000
75,000 bales hay,	1 50 per bale 112,500
250,000 bbls. tar and pitch,	50 per bbl. 125,000
250,000 bbls. flour,	50 " 125,000
220,000 bbls. pork,	50 " 110,000
150,000 bbls. beef,	50 " 75,000
10,000 bbls. lard and butter,	50 " 5,000
500,000 bbls. lime,	50 " 250,000
75,000 bbls. Irish potatoes,	50 " 37,500
150,000 bbls. apples,	50 " 75,000
400,000 bbls. corn,	50 " 200,000
250,000 bbls. oats,	50 " 125,000
50,000 bbls. small articles— such as beeswax, honey, cheese, &c.	50 " 25,000
	\$3,993,000
To which, add the freight of the above estimated 600,000 bales cotton,	1 50 pr. bale, 900,000
	\$4,893,000

The whole amount of estimated Rail-road freight in one year upon the productions of South-western Virginia, East Tennessee, the western border of

North and South Carolina, with North Alabama and Georgia, *four millions eight hundred and ninety-three thousand dollars.* To which sum, add the Rail-road freight on all the productions of the States in the valley of the Mississippi, north and north-west of the State of Tennessee, estimated at this time at double the above amount—and it may indeed be estimated in the course of ten years time, at from five to ten times the above amount; but it is here stated at only \$1,893,000, making the estimated income of one year, \$9,786,000. In this estimate, it is proper to remark, that many of the articles of produce in the Valley of the Mississippi, are of a different nature from those above enumerated, as for example, the article of *lead*—this will pass in very large quantities out of the Valley of the Mississippi, from Memphis to Alabama, Georgia, and the Carolinas; and but little or none of this article will pass from these states westwardly. The same may be said of cotton bagging—while the articles of tar, pitch, &c. will pass in great quantities from the south-eastern states into the Valley of the Mississippi. And it is quite probable, considering the greater risk and higher insurance on a voyage through the West India Islands, that a very large part of the foreign merchandise required for West Tennessee, Kentucky, Missouri and Arkansas, will come from Charleston or Savannah, by the proposed Rail-road.

To the foregoing estimates, the undersigned will only add fifty passengers per day for one year, or three hundred and twelve days, through the whole distance from the Mississippi river to the Atlantic Ocean, estimated at six hundred miles, at three cents per mile for each passenger, making \$360,000. The whole amount of Rail-road freight and passages for one year, \$10,066,000.

Upon these estimates the Bolivar Rail road Convention could not hesitate to give it as their opinion, that the proposed Rail-road is *practicable and desirable*, that "*it ought to be commenced forthwith*," and that "*it will contribute more in ten years time by the cheapness of its means of transportation of merchandise and country produce, than would be sufficient to defray the whole expense of its construction.*"

The opinion of the Bolivar Convention, that the proposed Rail-road as a measure of *National defence*, will contribute more by the facilities it will afford in the transportation of troops and munitions of war to the protection and security of the South Eastern States and Florida, than all the fortifications constructed or designed to be constructed south of the Chesapeake bay, is founded on the well established axiom, that "*the strongest of fortifications if properly invested and resolutely attacked by skillful and enterprising officers and soldiers, must eventually fall, unless seasonably succored from without*;" and on the well known fact, that the fortifications in question, must, on the approach of war, depend mainly for their defence and preservation against a powerful veteran foe, on men and supplies, drawn principally from the interior of the *Southern, Middle, and Western States*. The peculiar position of the States of *Kentucky and Tennessee*—the only states in the Union that are in all respects *interior and central States*—give to their military men the appropriate denomination of "*disposable force*." All the other States of the Union border upon the frontier, either maritime or inland. Hence it is, that in war, the whole of the effective force of these two central states, may be considered as the *disposable force of the Republic*, liable to be drawn out to whatever part of the frontier may be assailed by a foreign foe, to aid in his expulsion; whilst a large portion of the forces of the other twenty-two states, and every man of the United States Territories, will be required to serve upon their own borders, respectively. The experiment made during the late war with England, proved clearly that the fighting men of Kentucky and Tennessee, were always ready, and willing, and able, when properly directed, to fulfil the destiny and discharge the duty,

which their peculiar location in the national camp of the Republic rendered incumbent on them. When called to their country's defence, they paused not to cavil about national lines of demarcation. They freely tendered their services to fight, wherever the changing scenes of war might indicate the propriety of fighting. They thus pressed onward as freely to the frozen regions of the north, as to the verdant plains of the south, with the single object of meeting and beating their country's foe. The same may be said of the interior and western districts of the Northern, Middle and Southern States, and of all the States in the Valley of the Mississippi. And where, it has often been asked, is the point at which the disposable force of the great and growing States can be assembled in the shortest possible period of time, and at the least possible expense? If it is not to be found upon the Tennessee section of this mighty river, then will the Bolivar Convention most willingly abandon the claim which they have presented in favor of this point; but it experienced Engineers, on making the requisite surveys and estimates, should confirm the opinion of the Convention, that the proposed work is practicable, at a moderate expense—that it will enable the Government of the United States on the approach of war to assemble promptly at this place, an army of from 400,000 to 500,000 of these disposable and choice troops, and to move them from this central position of the Mississippi Valley to the Atlantic Ocean, at Charleston or Savannah in five days time, and at an expense of less than \$20 a man, the expediency of the work as a means of national defence, will be too obvious to admit of a doubt. It was not, however, the purpose of the Convention in the expression of the opinion, that the proposed Rail-road would contribute more to the national defence than the southern fortifications, to doubt the propriety of erecting any one of those works—on the contrary, the citizens composing the Convention, in common with their fellow-citizens of the western country, generally, have for many years past, noticed with approbation and pleasure, the unanimity and constancy with which their Representatives in Congress, have voted in favor of every necessary appropriation for the construction of those fortifications. But, since they are for the most part completed—and since the payment of the public debt, must soon leave the Treasury in a condition to complete the defences of the maritime frontier, by rendering the fortifications accessible to the men and means necessary for their preservation in war, by works equally and eminently adapted to the *protection and encouragement of Agriculture, Commerce and the Mechanic Arts, in peace and in war*—the Bolivar Rail-road Convention could not doubt of the propriety of authorizing the undersigned to solicit the President to direct a United States Topographical Engineer to make the requisite surveys and estimates, preparatory to the commencement of the proposed Rail-road, which they now respectfully solicit; and that the officer selected for this service may be instructed to report in person to the undersigned at Memphis, Tennessee, as soon as may be convenient, and to co-operate with them, in ascertaining the most eligible location for that part of the proposed work embraced within the chartered limits of the State of Tennessee, and to proceed eastwardly with the residue of the work, as soon as the desired charters are granted by the other states, through which the Atlantic and Mississippi Rail-road is intended to pass.

All of which is respectfully submitted.

Signed, EDMUND P. GAINES,
Chairman of the R. R. Committee.
JOHN POPE, ROBERTSON TOPP,
JAMES ROSE, ISAAC RAWLINGS.

To the President of the U. States, }
WASHINGTON CITY. }

The committee has authorized Isaac Rawlings, Esq. one of their members, to hand this communication to the President of the United States.

E. P. GAINES.

BALTIMORE PRICES CURRENT.

THE MARKETS.—There is scarcely any such thing as a market at present. There being no material change since our last, and an unusual demand for advertising, we give up our space chiefly to the latter for this week.

A CARD.

I am well prepared to serve my customers and friends with *all articles* in the Seed, Implement, and Domestic Animal line—also with all kinds of trees, plants, &c. *Orders should be sent immediately*, and all those for Clover, and Grass Seeds, and for Implements, must be accompanied by the cash or an order to draw, on delivery of the articles. I. I. HITCHCOCK.

TO THE PUBLIC.

J. S. EASTMAN, begs leave to tender to the public his grateful acknowledgements for their liberal encouragement to him during the twelve years he has been engaged in this city in manufacturing Agricultural Implements. He has been gradually extending his business from its commencement, and for the last four years, public patronage has been greatly extended towards him, which has induced him during the last season to increase his establishment by the erection of extensive shops and machinery, with the addition of steam power, and he is now prepared to receive orders for any machinery required in the agricultural line, it being his object to confine himself principally to the agricultural interest. He has on hand a general assortment of Implements of Husbandry, which he feels assured, are manufactured of as good materials and the workmanship as faithfully executed as any in this country. His patent Cylindrical Straw Cutters have stood the test of twelve years, and now about five hundred are in operation, and he challenges its superiority; all sizes, from \$30 to \$90, will be kept constantly on hand ready for shipment. Also Fox and Borland's Threshing Machine, which has thus far greatly exceeded his most sanguine expectations—he has put nine into operation during the last harvest, and each has given perfect satisfaction. Wheat Fans of superior workmanship—prices \$25, \$28 and \$35.

Being the first to introduce Gideon Davis' Improved Patent Ploughs in this city, and having an extensive demand for them, he confines himself more particularly to them than to any other kind, keeping always a full supply of them, with wrought and cast shares; yet he has a variety of other kinds that may be preferred by some persons. Every variety of useful farming implements will be kept constantly on hand, and he will take special care to have them manufactured by himself of prime quality.

SEED DEPARTMENT.

Having again taken the agency for the Messrs. Landreth's, of Philadelphia, he will shortly be supplied with an assortment of their valuable Garden Seeds, which are already well known to the public. He has also a stock of Garden Seeds on hand, which may be relied on as genuine.

Likewise all kinds of Grass Seeds will be kept in store, when they can be procured of prime quality.

Orders for Cloverseed will meet prompt and particular attention, if accompanied by the cash, it being a cash article with very small profit.

He would remind the public that many articles which are rare and scarce, are often ordered when they cannot be furnished, and many communications are made to such establishments in which the proprietor can have no interest further than to afford such information to his correspondents as may be in his power, in such cases it is expected that the letters will come post paid.

N. B. It is the desire of the subscriber, in order to save trouble, to confine himself to a cash business in future, particularly in small amounts. J. S. E.

NOTICE.

I will sell my farm on South river, at private sale. It contains upwards of a THOUSAND ACRES, and possesses more advantages than most farms. Any information which may be required will be afforded to those who will call upon me at my residence in this city, where I am always to be found.

RICHARD BARWOOD, of Thos.

Annapolis, Feb. 12, 1834.

MARYLAND AGRICULTURAL REPOSITORY.

Agricultural Implements, Seeds, &c.

SINCLAIR & MOORE, corner of Pratt and Light streets, Baltimore, tender their thanks to their friends and customers, for the liberal patronage which has been afforded them, and hope to entitle themselves to a continuance of the favor of the public, by gradually rendering their establishment more useful.

Since its commencement in 1821, they flatter themselves that they have introduced many useful improvements in the agricultural community.

Since the last season they have added several new patterns to their assortment of Ploughs, and now offer for sale a stock which comprises all the variety of forms, improvements and sizes, which they conceive to be essential to the different purposes of the farmer, and will be sold at wholesale or retail, at as low prices as articles of equal quality can be afforded in this market.

Extra castings made at our foundry to suit all the various kinds of ploughs, and furnished at reduced prices.

Also, Castings furnished for Threshing machines, Horse powers, and other purposes.

Improved WHEAT FANS,	\$25 00
do do do—extra large,	28 00
Common Fans,	19 00
Box Fans, small size,	15 00

STRAW CUTTERS, 20 inch cylindrical straw cutter suited to horse or water power, capable of cutting from 75 to 100 bushels per hour	70 00
--	-------

Extra knives, per set	6 00
14 in. box same construction	45 00
Extra knives per set	5 00
11 in. box	27 00
Extra knives per set	4 00

The excellence of these machines, is well attested by those who have used them.

Common Dutch straw cutters, with treadles	7 50
do without treadles	5 00

CORN SHELLERS of the most approved kind subject to a discount of 10 per cent for cash.	20 00
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CULTIVATORS, with wrought and cast tires from	3 50 to 5 50
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GRAIN CRADLES, with warranted scythes	4 00
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GRASS SCYTHES, ready hung for use.

WOVE WIRE, sales, screens, &c.

Thompson's superior cast steel AXES, and other tools. Mattocks, Picks, Shovels, Spades, Hoes, Trace chains. Hames, Straw Knives, Pruning Knives and Chisels. Bill hooks, Garden reels, &c. &c.

Patent steel manure and hay FORKS, &c. Clover, orchard grass, timothy, herds, tall meadow, oat, grass, &c. generally on hand.

A liberal discount will be made to wholesale purchasers, and as we intend to confine our retail sales to cash or town acceptances, a discount for cash, will be made on a single plough, or other implement of equal value of our own manufacture.

In the Nursery department, (having the particular attention of R. Sinclair, senr.) we have raised and offer for sale, new Chinese Mulberry (*morus multicaulis*) so highly recommended for raising silk and for ornament.

Trees of the above are comparatively large and are as correctly raised as any in our market.

Also, GRAPE PLANTS, and cuttings of the Catawba, Heribmont's Madeira, Isabella, Constantia, Bland, Muscadell, Sweet Water Linoir, red Muscat, Golden Chasselas and others.

The two first can be furnished at very reduced prices by wholesale.

They have also, as usual, good thrifty TREES, of Peach, Plum, Pear, Nectarine, Cherry and Apple.

Fine large PLANTS of the genuine red and white Antwerp and other RASPBERRIES.

Currants, Quince, Strawberry, Gooseberry and Filberts.

Trees, Shrubs, Thorn Quicks, Hop Roots, &c. a large stock.

See their new Catalogue for prices, and directions for planting, &c. to be had gratis at their store.

GARDEN SEED department, conducted by R. Sinclair, Jr.

Who offers for sale an extensive assortment of GARDEN SEEDS, nearly all the growth of 1833, many of which are raised at the nurseries and seed garden in the vicinity of Baltimore, under the immediate inspection

of Robt. Sinclair, senr. by constant care and attention seeds are produced of the greatest purity.

In addition to the above, annual supplies of Esculent Vegetables and other Seeds, are imported from several of the first establishments in Europe, the respectability of which warrant a full reliance upon the purity of their seeds.

Priced Catalogues will be furnished to every applicant; and dealers furnished with supplies on the most reasonable terms, by the pound, or in boxes, containing a full assortment of Garden Seeds, neatly papered and labelled.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to *not* get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,
American Farmer Establishment.

A FINE JACK AND JENNY—FOR SALE.

I have the selling of a fine Jack and Jenny, which measure as follows, viz:

The Jack is of the extraordinary height of fifty-seven and a quarter inches, and was eight years old last spring. He was imported from Malta, by Mr. C. Thorndike, of Boston, and is unquestionably one of the largest and most valuable animals of the kind in the United States. Price \$800.

The Jenny is eight or nine years old, (not more,) is fifty and three-quarter inches in height, and a fine animal. While the above is the *lowest price* for the Jack. I will sell the two together for \$1000. Letters in regard to these animals (post paid) will be promptly answered. Either of the animals will be sold separate from the other, if desired.

I. I. HITCHCOCK,
American Farmer Establishment.

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The American Farmer,

Edited and published by I. IRVINE HITCHCOCK, is issued every Friday from the "Establishment," No. 16 South Calvert street, Baltimore, Md.

TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

4. PRICE OF ADVERTISING.—One dollar per square, and in the same proportion for more than a square, or more than one insertion.

DIRECTION OF LETTERS.—Address all BUSINESS letters concerning the Farmer, the store, or the agency, to the proprietor, "I. Irvine Hitchcock, Baltimore, Md."

Printed by J. D. Toy, corner of St. Paul and Market streets.

THE FARMER.

BALTIMORE, FRIDAY, FEB. 21, 1834

GAMA GRASS SEED.—A friend of ours has requested us to say that he will pay five dollars to any person who will send to this establishment for him, one quart of Gama Grass seed.

GAMA GRASS.

MR. HITCHCOCK: *Wilmington, N. C. Feb. 1834.*

Dear Sir,—So many inquiries have been made of me, as to the nature, mode of culture, &c. &c. of the gama grass, I am induced to communicate, through the medium of your paper, such knowledge as I have on the subject.

The grass is perennial. Its most valuable qualities will be as hay, and when used green, for soiling. I have not yet made the experiment, but doubt whether it will answer for pasturage. This doubt is produced, not only by the form of the grass, but by the fact, that it is never found growing spontaneously where cattle have uncontrolled access.

The soils most suitable to its growth, are limestone, alluvial bottom, and rich clay loams. But its great excellence is, it will grow and produce abundantly in any soil, (dry enough for Indian corn,) naturally rich, or made so.

He who cultivates it on poor ground, with the hope of large crops, will certainly be disappointed.

It produces very little if any seed, the first year, nor does it reach its full maturity and best product, until the second or third year.

It is very easily transplanted. Where there is only a small supply, the quantity (for another year) may be greatly increased, by taking up the roots in the fall or winter, and dividing or transplanting them. Each root will furnish from five to twenty, and sometimes fifty plants.

The seed should be planted from November to January, and covered from one to two inches deep. They will not vegetate until warm weather.

When the roots or seed are planted to remain permanently, I think the best manner is to set them in drills three feet apart, and place them two feet apart in the drill. In two years the drills will be filled up, and there will be space for manuring between them. I take it for granted, the immense yield of this grass will produce exhaustion of the fertility of the soil; and unless manured, the product must lessen.

If not necessary, it is at any rate better, to cultivate it the first year, and keep it clear of weeds and other grasses: after that, I think it will root out any competitor.

It may be found in every state of the Union from Virginia to Missouri, (inclusive,) south and west: and I have been surprised by inquiries after it, from places where it abounded in the neighborhood.

Yours respectfully, W. M. B. MEARES.

P. S. The Devon and Durham arrived safe and in good condition, and as yet are doing well. W. M. B.

FOX AND BORLAND'S THRESHING MACHINE.

MR. HITCHCOCK: *Baltimore, Feb. 18, 1834.*

Dear Sir,—In reply to the call made on me in your paper of last week, respecting Fox and Borland's Threshing Machine as made by me, I would observe, that I have altered the construction somewhat different from the patentees's, maintaining all their principles, however. Of these, I have had nine in operation during the last harvest, which have fully answered my expectations. I am informed that they will take the grain through as fast as two men can put it in, having the bundles cut for them. They require a four-horse power, and occupy a space of four feet square.

For its decided advantages over other Threshing Machines, I will take the liberty of referring to the following gentlemen, who used them last harvest, viz: Col. Edward Lloyd, sen., Gen. James Sewall, James Sykes, Esq., Daniel Murray, Esq., Dennis A. Smith, Esq., Philemon Warfield, Esq., and Gen. Charles S. Ridgely.

The cash price of these machines, exclusive of the horse-power, is eighty dollars. Stationary powers are the best and cheapest, and in most instances can be built most conveniently on the farm where they are to be used.

I make portable horse powers, price one hundred and fifty and one hundred and eighty dollars. The last named will prove the cheapest powers in using.

Yours, &c. J. S. EASMAN.

TREATMENT OF LAND—OATS.

Sir: *Mt. Vantage, Alabama, Jan. 30, 1834.*

I reside in a country where it is customary to raise nothing but corn and cotton, and where we generally have no more open land than we can cultivate. The common practice is to put every acre in cultivation, and if the planter should have some ten or fifteen acres more than he has force to cultivate, he purchases an additional slave, and plants it in cotton, and when his land is exhausted, he purchases more. My situation is somewhat different, I have several hundred acres more of cleared land than I am able to cultivate, and I am not able to follow the custom of my neighbors, (if willing,) and therefore wish you to inform me through your useful paper, the best mode of improving my land, which is almost perfectly level and a tolerably rich mulatto soil. I expect you will tell me when I rest my land, to keep it enclosed and keep off the stock until it grows up in weeds, grass, &c. and when these are in a succulent state to turn them all under with a large plough, but our mode of cultivation will not admit of this, for we are engaged in the culture of our corn and cotton until August, when we commence gathering fodder, and when that is completed our cotton is "blown," and we must then commence "picking out," or as a farmer would say, make hay whilst the sun shines, for every hand is worth \$2 per day, (if dry,) from the first of September, until the first of December, and before this time frost has destroyed the whole vegetable matter, and in my opinion rendered it almost useless as a manure, even if turned under, but the growth of weeds and crab grass, is so luxuriant when stock is kept off, that it is almost impossible to manage to turn it under with a plough.

In 1832, I had a field from which I kept off the stock, and another in which they had full access, the latter produced the best corn and cotton, now had I been able to turn under the weeds and grass in September or October, when in a succulent state, I think the result would have been different. A portion of the field that was suffered to grow up in weeds and grass, I caused to be set on fire, and it burnt off very clean; this produced better than the other part, can you, or any of your intelligent and experienced readers account for this? Was it owing to the alkaline and soot of the consumed vegetable matter, or was it owing to my being able to plough the part freed of the vegetable matter, much better than the part that was cumbered with it? Now I believe with Taylor, that the treading of land injures it, that is, if the land is of a stiff nature and subject to become hard, but our sandy soil, which by-the-by is almost too light, I think is improved by grazing, for it cannot be rendered stiff. I think it best after it is well covered with grass, to let the stock in, and let them consume the grass and deposit the manure; otherwise the grass remains on the land and is rendered useless, as before observed, by the frost, before you can spare the time to plough it in. I propose next month to seed one hundred acres with oats, it is said to be a greater exhauster of soil than other grain. Is this a fact?

Can you or any of your correspondents inform me? Oats I find as far south as this, is the only small grain that will pay the husbandman for his labor, for as to wheat I tried it six years and lost four crops, two of them totally by the spring frosts, and as to rye, it grows to an astonishing height, but produces but a few scattering grains.

I am one of those credulous beings that have been frequently imposed on by "new improvements." I should notwithstanding like to have a first rate Straw Cutter, what think you of those advertised by Sinclair & Moore, styled "Cylindrical Straw Cutters," say fourteen inch, price \$15, are they easily kept in order, are they bulky and consequently the freight high.

I presume you will find the foregoing remarks too crude, and of too little interest for publication, and it is not my wish that they should be published, except so far as to elicit information from others.

Yours,

A SUBSCRIBER.

[With regard to the general subject of the above letter—the treatment of land—we will "pause for a reply," from some of our experienced readers whose attention to the subject we respectfully request. But we delay not to answer our correspondent's question about the straw-cutter. We have the highest opinion of the use and value of the Cylindrical Straw Cutter referred to, and have recently been giving our readers some of the evidence on which this opinion is founded. We have supplied many of our subscribers and others with these implements, and have never heard any other report concerning them, than expressions of warm approbation. They are easily transported, occupying about thirty to forty cubic feet of space—see notice of one in No. 48 of this volume.]

Ed. Amer. Far

(From the Franklin Repository.)

MR. HARPER: *Jan. 20, 1834.*

Shortly before last harvest, you published a suggestion in your paper, "that wheat cut ten days or two weeks earlier than usual—that is before it became entirely ripe, yielded better and made superior flour." In consequence of that statement, I had the experiment tried to a small extent. I had a small part of a field cut about ten days sooner than the residue—it was kept separate, and when recently brought to the mill, with the wheat cut from the same field at the usual time, the early cut wheat weighed two pounds to the bushel heavier than the other. The flour made from it (there were ten bushels) is remarkably fine, equal to any I ever had in my family, and superior to any I have had this year from any other wheat. I think it proper to make these facts known; although I would not say that a single experiment like this ought to establish a general rule. T. G. McCULLOH.

MADNESS. AN IMPROVER OF THE REASONING POWERS.—The following reasoning by a madman strikes us as the most perfect exposition of the true theory of sanity and insanity that we have ever seen or heard. A man confined in jail as a lunatic made these observations:—"We that are locked up here, are only called mad, because our madness does not happen to agree with that of the rest of the world. Every body thinks his neighbor mad if his pursuits happen to be opposite to his own. His neighbor thinks the same of him; but then these two kinds of madness do not interfere with each other. Now and then, there comes an eccentric man, who taking a just view of things, thinks them all mad—him the majority catch and lock up here. 'That's my case.'"

A person once said to a father whose son was noted for laziness, that he thought his son was very much afraid of work.—"Afraid of work," replied the father "not at all, he will lie down and go to sleep close by the side of it."

AGRICULTURE.

(From the Sugar Cane Manual.)

CULTIVATION OF THE SUGAR CANE.

(Continued from page 364.)

PROCESS OF SUGAR MAKING IN LOUISIANA.

Grinding of the Cane.—The canes, as has been before mentioned, are brought from the field in carts, and delivered under a shed, whose roof is a continuation of that of the sugar house, and beneath which from fifty to one hundred loads are capable of being protected at once, from the weather. The sugar house is a high, two story building, generally of brick, from one hundred to one hundred and sixty feet in length, by fifty, or sixty in breadth. In a majority of instances it is situated near the banks of the Mississippi, standing endwise to the river, and having one or two projections, one story high and thirty or forty feet long, situated at right angles to that end of the main edifice which is contiguous to the river. The mill for the grinding of the canes is placed at the remote extremity of the large building—the cane shed, alluded to above, being connected with the same end. That part of the building devoted to the mill and reservoirs for the expressed cane liquor, is separated from the rest of the house by a partition, and occupies a space of about thirty-five by fifty feet.

The cane mill consists of three east iron cylinders, which are arranged either in a vertical or horizontal position. The first arrangement is to be found in the older sugar houses only; the horizontal, being that which is, at present, universally preferred.

The cylinders, in the vertical mill, are from thirty to forty inches in length, and from twenty to twenty-five in diameter. They are furnished with cog wheels fixed on the upper ends of their peripheries, and working into each other, the moving power being applied to the middle cylinder. These cylinders are mounted in an iron frame; consisting of two horizontal pieces, sustained by uprights; the openings of the frame contain brass bearings for the pivots of the three rollers, which brasses are capable of adjustment by means of cross keys and wedges, driven into openings in the frames, so as to force the rollers towards each other, and retain them at regular and unvarying distances. The surfaces of the rollers are fluted, with grooves of a small depth, which enable them to take a firm hold of the canes, to draw them forward, and also to facilitate the running down of the juice from the canes into a pan or cup, which is formed round the rollers at the lower part by a plate of iron, turned up all round at the sides and placed in the bottom of the frame.

In horizontal mills the rollers are somewhat longer, being sometimes five feet in length, and are arranged in a triangular form one above, and two below. The power is applied to the upper roller, and motion is communicated from it to the others by an arrangement similar to that used with vertical mills. These rollers are also grooved like those which are vertical.

The mill is situated eight or ten feet from the ground, or in what may be called the second story of the building, in order to facilitate the passage of the juice to the kettles in the adjoining apartment. The canes are brought up to the mill by means of a machine called the cane carrier. It consists of an inclined plane, forty or fifty feet long, formed by a species of bagging, or of a double chain with wooden seats, inserted crosswise, into the alternate and larger links—the whole forming a moveable band about two feet wide around revolving cylinders, or hand wheels, the cylinders being kept in motion by the moving power of the mill. The plane is formed by this band at an angle of thirty-five degrees with the horizon; upon which, the canes being laid, in pieces from three to four and a half feet in length, are gradually and regularly carried up to the mill.

In the case of vertical cylinders, a person takes the canes as they arrive at the mills, and holds them between two of the cylinders, at different distances up and down. As they pass through, they are turned round by a circular piece of frame work, which is fixed fast to the upper and lower frames, and is made to encompass the middle roller at the back, and held in contact with it, till the ends are caught by the other roller. The second pair of the rollers is adjusted by the wedges of their bearings, so as to be rather nearer than the first pair, because the canes are flattened and crushed by the first pressure between the rollers, and require a still greater degree of pressure the second time they are passed. The space between the rollers does not, in either case, exceed three-eighths of an inch. When the cane is delivered to the horizontal mill, it does not require to be handled a second time after having been placed on the carrier; but, on arriving within a few feet of the mills, it falls into a wooden hopper whose bottom descends at an angle of forty-five or fifty degrees, from which it passes by the force of gravity between the rollers. The two lower rollers are placed very near each other, so that the canes are made to pass from the one to the other; but these two rollers, moving in opposite directions, cannot be suffered to come in contact. In this arrangement, it is obvious that the upper roller answers to the middle, and the lower ones, to the two outside rollers of the vertical mill. The canes, descending through the inclined trough above described, enter between the two rollers, and are carried forward to the other roller, and thus subjected to a second pressure, without the aid of a returner. The lower rollers are contained in a small cistern, which serves to receive the cane juice, when expressed.

The mill is moved either by cattle or steam power. No wind or water mills are known to exist in the state. Of the relative proportion of the steam and cattle power employed, it is difficult to speak with certainty. In 1825, the number of sugar estates was six hundred and ninety-one, of which number, but one hundred and twenty were supplied with steam engines. Since that period, it is believed that the number has nearly doubled, leaving, however, the majority of sugar mills still worked by cattle. It is, however, probable, that three-quarters of the cane are ground by steam mills, as they are invariably used on the large plantations.

When the mill is turned by cattle, the axis of the middle roller, in the vertical cylinders, has long levers fixed across it; the arms to which the cattle are attached, extending nearly twenty feet from the centre; and to render the arms firm, the axis of the roller is carried up to a considerable height, and oblique braces of wood, by which the oxen or horses draw, are extended from the extremities of each of the arms, to the top of the vertical axis, thus forming a triangle. Four arms are provided, to each of which a pair of oxen, or of horses is attached. When horizontal cylinders are propelled by cattle power, the upper roller is turned by cogs at one end, which are caught by cogs on a vertical shaft.

When a steam engine is the working power, the gearing is much more compact; in this case, a bevelled cog wheel gives the motion by being fixed in a horizontal shaft, on the other side of which there is fastened a large cog wheel, and this is turned by a pinion fixed upon the end of the axis of the crank or working shaft, of the steam engine.

When the canes have, in the manner above described, passed between the rollers, they are conducted out through an inclined trough, which usually goes through the side of the house, and thus they descend into carts that are constantly in attendance to convey them away to a convenient distance from the house, where they form, in the course of a few years, an immense heap of useless rubbish.*

* The cattle are fond of feeding upon the expressed cane stalk, upon which they soon grow fat; occasionally, they are employed in repairing the levee as they af-

Defecation.—The cane juice is run off by a spout into two or more large vats, situated in the mill room, near the partition which divides it from the boiling room, sometimes called the laboratory. These vats are rectangular, shallow boxes, made of cypress plank, and capable of holding many hundred gallons. It is not common to find these vats or the spouts leading to them, lined with copper or lead; although it is a precaution which is beginning to be observed by those planters who aim most at neatness and economy in their operations.

Various methods are adopted for the separation of the coarse feculencies of cane liquor, and which consist of pieces of the rind and of the pith, as well as of earthy matter, which last sometimes adheres to the lower joint of the cane, or which it in some way contracts in being cut and hauled to the mill. Some place a wire sieve upon the corner of the vat, through which the sap falls into the reservoir. Others fix a gauze division, vertically across the vats towards the extremity, which receives the sap, and through which it runs as it flows into the other end, or is drawn off to the kettles. Others, again, in addition to a coarse sieve, have recourse to subsidence, drawing off the contents of the reservoir by means of a copper tube bent at right angles, one leg of which passes through a stuffing box into the end of the vat next to the boiling room, and even with the bottom of the vat, while the other end is capable of being moved up and down in one direction, so as just to permit the surface of the juice to be discharged; in this way, the insoluble impurities are left at the bottom, and removed from time to time, when accumulated in sufficient quantity. The channels and vats are also cleansed, with warm water, and finally sprinkled with lime or ley from ashes. In very warm weather, this is done once or twice in twenty-four hours.

But the most difficult part of defecation is effected by the aid of lime and heat. In proceeding to the description of this process, it will be necessary first to explain the kettles and furnaces. These are situated in the boiling room or laboratory, and occupy the centre of the main building. A set of kettles, four in number, is arranged in a line against the main building, on one side, or on both sides, according to the extent of the estate. One set occupies a space of about thirty feet in length by seven to eight feet in breadth; the tops of the kettles being raised from the floor from two and a half to three feet. They are set with the utmost precision in a very solid body of masonry, within which are situated the arches (which give support to the kettles), the furnace and the flue which communicates heat to them.

The kettles are made of cast iron; and are so set as to have their capacity considerably increased by the sloping rise of the masonry above their rims. This rise is about six inches, measured perpendicularly, the slope not differing sensibly from forty-five degrees. It is effected by using fire bricks of the first quality, ground to one another, so as to make the most perfect joints; and they are imbedded in a peculiar mortar, which consist in parts of pulverized bricks. The space thus left between the kettles which is fourteen inches, prevents the contents of one from being dashed into the other, by excessive ebullition; and it also affords space for the construction of arches, which renders the setting more secure. The kettles of a set have different capacities: the diameter of the largest at its surface being seventy-two inches, that of the next sixty-six, the next sixty, and the last fifty-four; or the largest is sixty-six and the smallest forty-eight; the depth, in every case, being one third and two inches of the diameter. The names appropriated to the different kettles are as follows: the largest is called the *grande*, the next the *flambeau*, the third the *symp*, and the last the *battery*. The grand is at

ford a degree of protection from the depredations of the *craw fish*, a crustaceous animal belonging to the family *decapoda macroura*.

the end next the mill-room, while the battery, of course, occupies the other extremity of the series.

The furnace is under the battery. Its door and ash-pit are upon the outside of the building. The flue from it passes under the centres of the different kettles: and after having passed the last one, it turns at right angles and proceeds out of the building to the distance of a few feet, when it ascends, in an independent chimney, to a height at least equal to the horizontal circuit performed by the flue.

The shape of the furnace is slightly ovoidal—its diameter being larger, by about one foot, at the grate than at the battery. The bottom at the battery is situated from two and a half to three and a half feet from the grate. The flue is horizontal at bottom, varying from fourteen to twenty inches in height, at its commencement under the syrop, and growing more shallow by a few inches, as it reaches the other extremity under the grande. Its breadth throughout, is five-eighths the diameter of the kettle under which it passes. On reaching the chimney, the flue enlarges to the capacity of two square feet, of which dimensions it is continued out to the top of the chimney.

The chimney is carried up double: the inner wall is but four inches thick, or the thickness of one layer of bricks; the hollow space between it and the outer wall, being of the same width. The inner wall is tied to the outer, by laying a brick crosswise at each corner, at the distance of every four feet; while a four inch opening is also left in the exterior wall on each side in the centre of the spaces between the ties, from the bottom to the top, and finally four lateral orifices of the same size at the summit. The consequence of this arrangement is, that the chimneys rarely, if ever, crack, like those constructed of solid masonry.

The grate of the furnace is formed of separate bars, whose extremities rest upon a projection of masonry. The bars are kept apart by means of short lateral projections at each end, half an inch wide. They are five or six inches deep, one inch wide at bottom, two at top, not including the projections. The more modern grates have bars with projections in the centre also: as it has been found that without this precaution, they are liable, in consequence of the great heat to which they are exposed in that part, to suffer from curvatures.

An opening into the furnace, called the feed-mouth, for the supply of the fuel and the regulation of the fire, is left, whose diameter is about fifteen inches. It is formed by a circular casting, whose interior opening is about twenty-three inches. Its lower side is on a level with the grate. Below the grate is an ash-pit whose depth is not far from three and a half feet, having a rectangular opening, which is situated a little to the right or left of the furnace mouth, in order to protect the fireman from the heat of the coals which fall between the bars of the grate, and often form a glowing pile in the ash pit.

The casting above described for the furnace mouth is without any door; in consequence of which and its limited size, another casting of different shape has been introduced, to some extent, into the most modern sugar houses. Its shape is rectangular, being on the outside sixteen inches high and twenty-four inches wide, with two doors, which are made double with an air chamber between. The bottom of this casting runs horizontally inward, through the side of the furnace, while the top ascends four inches and the sides diverge each four inches. One or both of the doors are opened at the charging of the furnace, according to the size of the wood introduced, and which is cut into pieces about three and a half feet long.

In describing the process of defecation, we shall suppose the operation of sugar making to be in progress. The grande is charged by lifting the gate from the vats in the mill room—a few buckets of its previous charge having been left in the grande to protect it from cracking on the admission of cold juice. Two or three gallons of its contents are then formed

into a milk, as it is called, with from six to twenty-four cubic inches of slaked lime; and the milk is thoroughly stirred into the contents of the grande. As the heat of the juice increases, minute bubbles of air make their appearance, and a greenish grey scum forms upon the surface of the liquor. When the temperature reaches 200°, the thickness of the scum is very considerable; and it assumes a darker color. Watery vapor now begins to form, and to force itself through the scum, causing it to crack. This stage of the process is sometimes called *yawing*; and is the signal for skimming. This is done with shallow copper skimmers, ten or twelve inches across, attached to long wooden handles; the scum being thrown into an adjoining vat, whence it is conducted by a gutter to the outside of the building. In some sugar houses, it is thrown into a vessel provided for the purpose, and allowed to stand in order to give time to the clear part to subside, which is returned again to the grande. The skimming is completed in ten or twelve minutes; when the contents are said to be *clarified*, and are ready to be ladled into the flambeau, if the flambeau is not ready for its new charge, it continues to be skimmed in the grande, while it remains.

Meanwhile, the flambeau and syrop which are filled with juice that has previously been through the operation above described, are boiling and throwing up scums, that had escaped removal in the first process: these are pushed backwards by wooden oars, over the saddles separating the kettles, (and which are depressed two or three inches for the purpose) from the syrop to the flambeau, and are continually arriving to mingle with the contents of the grande. It is to be remarked that there is a gradual rise from the grande to the battery of a few inches in order to favor this operation of skimming backwards, and although the kettles only, are kept full, yet the ebullition elevates the surface of their contents so as to be even with the tops of the saddles.

The indications of a good clarification are the following: when the juice comes into the flambeau, it should be nearly transparent, and of a pale yellowish wine color, boiling freely with a large round bubble, and throwing up its additional fecula with promptness.

When too much lime, or *temper*, as it is called, is added, the juice has an alkaline smell, and a reddish color, and boils with a small, flattened bubble: on the contrary, when there is a deficiency of temper, the boiling is not free, and a slimy scum adheres to the sides of the masonry above the kettles.

The variation in the dose of lime, depends upon the ripeness of the cane, and its freedom from acidity. Fresh juice, from perfectly ripe Cane, is treated with only about six cubic inches of lime to the grande; but when the Cane is green, or frosted, the dose is increased to twenty-four inches, and sometimes even to thirty. The quantity of temper required oftentimes differs during the same twenty-four hours, on account of some difference in respect to moisture in the land producing the Cane. Hence, the process of liming is regarded as the most difficult part of sugar making.

On a few estates, in approximating to the dose of temper, which a particular cane liquor may require, resort has been had to the following plan: a glass decanter, whose capacity is known, is filled with the cane liquor to be clarified, and portions of slaked lime, previously weighed out in three or four grain doses, are added, so long as they continue to occasion any precipitation, or the appearance of flocculi. The quantity added to complete this effect is noted, and an estimate is made from it of the weight of lime needed for the contents of the grande,—deducting however one-fifth of the proportional result in consequence of the preliminary essay having been conducted in the cold, whereas the defecation in the kettle is performed at a boiling heat, in which case, temperature compensates for the deficiency of temper.

In frosted cane liquor, some sugar boilers employ ley from ashes in place of lime, which they add in

the proportion of about one quart of the highest possible strength, as obtained in the common process of leeching, to the contents of a single grande.

In frosted cane liquor which has become very acid, a few planters are in the habit of relying solely upon heat to produce the defecation.

A method of clarification by steam, is coming into use upon the larger and best conducted plantations. The sap is run off into wooden vats, lined with copper or lead, of the capacity of the juice cisterns, before described, and which they resemble in shape, excepting that they are deeper in proportion to their length and breadth. A copper steam pipe, between two and three inches in diameter traverses, five or six times, the bottom of the cistern, to which it is firmly attached. The cane liquor is introduced, and when the pipes are covered with it, steam is let in, either from a boiler provided expressly for it, or from the boiler of the engine, or it is the escape steam which is employed. The temper is now added; and the access of steam maintained, until the yawing occurs, when it is shut off, and the scums are immediately removed, or the juice is left until nearly cool, to be drawn off by an orifice situated within one inch of the inner bottom of the cistern through which the liquor is suffered to flow so long as it continues to run clear; after which it is closed, and the remaining portions are let off by another cock placed parallel with the inner bottom into casks, from which, after some hours of repose, about half of their contents is drawn clear. The clarified liquor is run from these vats (commonly two or three in number) into a general reservoir near the grande, traversing in its progress a coarse bagging filter, interposed for detaining any portion of light flocculent matter that may have escaped the previous process. From the reservoir it passes to the grande, and in boiling is skimmed and ladled forward as before described, more lime being added, if appearances indicate that there is not enough; and on the other hand, more fresh juice, if too much has been added.

A new method of clarification is offered the present year, to the planters of Louisiana, by M. Guy Duplantier, of Baton Rouge. It is stated to possess considerable advantages over the ordinary process. So far as it is made known by the inventor, it consists in adding to the cane liquor in the grande a large dose of lime and subsequently, a certain portion of a substance whose name is not divulged, but whose properties are declared to be perfectly innocuous, inasmuch as it is asserted to be of frequent use in families in connection with food. The sugar produced by this process is certainly better grained, drier and of a lighter color than that manufactured on the old plan, although it still retains a yellow tinge and possesses an alkaline odor. One or two crops have been fabricated upon this plan: and have commanded a higher price, by about one cent on the pound, than the ordinary sugar of the country. Its advantages are offered to planters by the proprietor of the discovery for the sum of \$1 50 on each hogshead of sugar made after this method.

Evaporation. By evaporation is meant the dissipation of the water of solution by heat. The quantity to be evaporated varies with the ripeness of the Cane. In seasons when it reaches maturity, it constitutes between 70 and 80 per cent. of the juice; and on the other hand when from the early access of frost, or the unusual prevalence of wet weather, it is not allowed to ripen, it rises to from 85 to 90 per cent.

An instrument called the saccharometer, or hydrometer of Baume, is frequently used, in order to learn the saccharine richness of cane liquor. It consists of an hermetically sealed tube, enlarged into a ball at one extremity, and loaded with shot sufficiently to give it an upright position when placed in any fluid. The stem contains a coiled paper, upon which the degrees are marked. Or it is made of brass, with the degrees engraved directly upon the stem. Beginning at the top of the stem it is graduated from

1 down to 34°, this being the point at which it stands in a solution consisting of five parts of sugar and three of water at 82° of F.

Cane liquor in Louisiana varies between 7° and 9° of this instrument, although it is often boiled when no higher than 6°; and very rarely it has been known mounting as high as 10 and 11°.

The saccharometer is not, however, regarded as affording a sure criterion of the proportion of sugar in cane juice;—the preponderance of gum and green fecula in some cane liquors being so great as materially to influence their specific gravity; still its use is attended with a very important advantage in arriving at an approximative idea of the saccharine matter.

The kettles have been described in the account given of defecation. The juice is ladled forward by means of wooden buckets, holding from five to eight gallons. They are furnished with wooden handles nine or ten feet long, which are inserted at one end into the bucket across its top;—the middle of the handle moving in a crotchet (like an oar) inserted into a timber running along in front of the kettles. The crotchet is placed half way between the central point of the kettle to be emptied, and the top of the saddle which divides it from the kettle destined to receive its contents. It requires two men to handle one of these dippers; but such is the facility of using the apparatus, that by its means, the battery is discharged and all the kettles scooped forwards in fifteen minutes.

The furnace is maintained at a uniform heat, day and night, from the commencement of the grinding season in November, till its conclusion in January—stopping only a few times to scrape from the kettles the accumulation of rust, lime and earthy impurities which collect upon them, and which if not occasionally removed, cause them to crack.

One set of kettles, only, is in use at a time, unless it be on those estates where the crop to be ground exceeds 200 acres. The quantity of wood required to keep the engine in motion for grinding the canes and for supplying the furnace for the kettles, varies from twelve to sixteen cords per day, although with bad cane juice it sometimes amounts to twenty cords. The kinds of wood used are ash, maple, cypress, gum and laurel.

During the evaporation, all the kettles are maintained in ebullition, with the exception of the grande; the foam and bubbles usually mounting up to within an inch or two of the tops of the saddles. When the syrup or battery is likely to boil over, they are kept down by frequent blows with the paddles. The time required to bring a charge of the grande to the crystallizing point, varies from one hour to two, depending upon the setting of the kettles and the richness of the juice.

The transferring of the syrup is not performed at once. The three kettles which are hottest requiring to be kept filled, two or three buckets of juice are, from time to time, ladled forward to effect this object.

To determine whether the syrup has attained the proper consistency for granulating, or for being struck, as it is usually termed, a large copper spoon, attached to a long wooden handle, is thrust into the battery and lifted into the air over the kettle: if the syrup is so thick that it covers the spoon in a thick pellicle, and drains from it slowly, presenting at the same time a grained appearance, from the little bubbles of air and aqueous vapor it contains, it is considered as sufficiently cooked; and it is instantly discharged by the bucket into an adjoining reservoir, from which it flows by channels to the coolers for granulation.

Another method of judging of the proper degree of concentration is to place the thumb upon the edge of the spoon, freshly taken from the battery, which occasions the removal of a drop of the syrup: this is drawn out into a thread by means of the fore finger. If the thread breaks dry and rises in a spiral form, the boiling is good.

Within a few years, a slight modification of the

foregoing plan of evaporation has been introduced into Louisiana. It consists in the use of the *Bascule pan* of the French, invented by M. Guillon, and known also to American refiners by the name of the *tilt pan*. It is a copper vessel, mounted over a separate furnace.

In using this pan, the juice is evaporated in the kettles as before, but is struck between 25 and 28° of the hydrometer of Baume into a large cistern capable of containing at least four or five hogsheds, where it cools, and deposits a thick sediment. From this reservoir, it is pumped up, from time to time, into a smaller one situated just above the bascule pan. The operation with this apparatus is as follows: The gate attached to the reservoir of syrup is raised and the bottom of the pan covered to the depth of four inches. A brisk fire being kindled under it, boiling soon commences: a slight scum rises, which flows down into the lip, whence it is removed by means of a hand skimmer. The striking point is ascertained as in the kettles, except that a thermometer is often made use of to learn its approach. When struck, the thermometer stands from 236 to 238°.

To assuage excessive ebullition, it is customary to throw in a small piece of lard or of butter, just previous to the completion of the cooking; and at the moment of decanting the charge, notice is given to the fireman, who closes the ash-pit door to prevent the flames from rushing up into the boiling apartment to the inconvenience of the operator, who is stationed upon the rim of the furnace by the side of the pan. Immediately on its being discharged, it is suffered to fall back to its place, and the gate of the reservoir is lifted as soon as possible, in order to cover the bottom of the pan before it becomes too hot from the action of the flame.

The time required to perform the operation varies from twenty to thirty minutes, and the result is a highly improved sugar, with the estimated gain of one hogshed in fourteen over the old method.

Granulation.—This part of the process is effected by running off the battery into shallow wooden vats, situated in a line with the kettles at the extremity of the house, opposite to that occupied by the cane mill. These vats are made of cypress plank, and measure from six to seven feet in length, from four to five feet in width, by twelve to fourteen inches in depth. Not less than six of these are used with one set of kettles; and in general a sugar house contains eight or ten, and sometimes a still greater number. A single strike covers the bottom, or forms a layer in one of these coolers from two and a half to three inches deep. Immediately after the first charge has been run into a cooler, it is thoroughly stirred with a wooden oar or spatula, in order to render the syrup uniformly consistent—the last portions from the battery being more dense than the first. As soon as a thin crust of crystals forms at the surface, a second stirring is given with a view to disseminate the crystals equally through the fluid mass. A second charge is not introduced until the first has become thoroughly granulated and hardened so as to give it support, without mingling the two together. This requires a period from six to fourteen hours, varying with the quality of the juice and the dryness of the atmosphere. The second charge is stirred like the first. In this way four batteries are struck into each cooler.

It sometimes happens that a skip which is not sufficiently cooked, comes to the cooler; in this case, granulation does not take place, and the defect is remedied, in some measure, by mingling with it, as soon as possible, a charge which is over cooked, or boiled higher than usual.

The effect of underlining also, is readily perceived when the syrup reaches the cooler, by the appearance of a white, glutinous froth upon its surface. This, in like manner, is remedied by adding to the next skip, just previous to striking, a small quantity of lime water; and on its arrival at the cooler, stirring the two skips intimately together.

Potting.—This is the concluding operation in sugar

making. It consists in the removal of the sugar from the coolers to the hogsheds in the draining house. It will be necessary, in the first place, to describe the draining house. In some sugar houses it consists of a long room from forty to sixty feet in length, forming an extension of the main building, in a line with it, and contiguous to the space devoted to the coolers, from which, however, it is separated by a partition. In others, it forms an apartment similar in extent, but instead of being placed in a line with the main building, it is situated at right angles to it. But more generally the modern sugar houses are provided with two smaller draining rooms, both at right angles to the central building, and connected with it by doors contiguous to the space occupied by the coolers. The apartment is duly lighted by windows, and well provided with double doors, opposite each other, in order to favor ventilation. The floor consists simply of scantling, running crosswise, eighteen inches apart; beneath which are situated the molasses cisterns, each covering an area of not far from twenty square feet. Their depth is sixteen or twenty inches; and they are either made of brick and plastered with Roman cement, or of two and a half inch cypress plank, and rendered tight by caulking and pitching: the latter construction is the most common.

The empty hogsheds are arranged upon their bottoms over these cisterns, upon the scantling, with their joints left considerably open, and having three or four augur holes in the lower head, which are closed by sugar canes on the inside—the upper end of the canes reaching nearly to the top of the hog-head.

After the granulation of the last skip of a cooler, it is usual to dig a conical hole in the contents of the vat, about a foot and a half across at top, in order to collect a portion of the molasses previous to the potting. In a little time the hole is partly filled with molasses, which is scooped out and carried to the molasses cistern in the draining house. This preliminary process, (not always practised,) is called *bleeding*. In some sugar houses the same thing is accomplished by having two plugs in the bottom of the vats, of about two inches in diameter, which come up through the sugar. These plugs being drawn, the molasses flows out through channels under the coolers, and is conducted into a general reservoir, from which it is transferred to the draining house. Still another method is, to have two holes through the sides of each cooler, even with the bottom, into which are thrust iron rods extending across the cooler, by which orifices are made for the draining of the molasses, and the coolers being inclined forward, its uncrystallized syrup flows out, and is caught in buckets.

The quantity obtained, however, by these methods, is very small, compared with what afterwards drains from the sugar in the hogshed. It rarely exceeds eight or ten gallons to a cooler. In many instances, bleeding is altogether omitted, especially when the weather is cool, as the molasses is then of service to the sugar, by enabling it to retain, for a sufficient length of time, that degree of heat which is requisite for its most effectual drainage.

The temperature at which the draining is performed, does not vary much from 98° or blood heat. When the weather is cold, however, it is putted rather warmer. It is spaded up from the cooler in thin slices, by an iron shovel, and carried in small tubs to the hogsheds. These, when filled, are usually covered with a broad cover. The house is kept as warm as possible, by not opening the doors and windows, unless in warm and dry days. A few draining houses are furnished with stoves: in them the temperature is constantly kept at 80° F.

When the sugar has drained, so as to feel somewhat firm, in order to give a free vent to the molasses: the canes are sometimes started a little from the holes into which they have been thrust, and after one or two days they are usually withdrawn altogether.

The average quantity of molasses which drains from each hogshed, is from forty to forty-five gallons.

The draining is completed in, from twenty, to thirty days; after which, the hogsheds are filled up from one another, and are then ready for shipment.

On draining off the molasses cisterns, a greater or less deposit of sugar, called *cistern bottoms*, is found in these vessels. They vary, from three, to five hogsheds, for every hundred hogsheds of molasses. It is either transferred to the kettles, boiled up with lime water and evaporated as before, or sold to sugar refiners in the condition in which it comes from the cisterns.

(To be continued.)

DOMESTIC ANIMALS.

(From the Farmer's and Grazier's Guide.) OF THE SELECTION AND MANAGEMENT OF SHEEP.

The structure, habits, and diseases of sheep so nearly resemble that of neat cattle, that whatever we have said of the one, will apply equally to the other: the same care should be used in the selection of sheep for stock, as was directed in the choice of cattle, a similar treatment should be observed, with respect to the land upon which it is intended to feed them; and an equal care exerted to apportion and vary their food, in such manner as to prevent the disorders which arise from repletion, as well as those which result from stinted or bad food.

The diseases which prove most fatal to sheep, commit the greatest ravages among those in the best condition, either in the spring, or at the latter end of the year, when the season is unusually wet or changeable; and those sheep which have been principally fed upon turnips, are most subject to their attacks.

Like neat cattle, they are very subject to a plethoric habit, or fullness of blood; it is therefore very dangerous to change the pasturage of sheep from a bare to a more luxuriant pasturage, except by slow degrees.

Low grounds, or woodland pastures, where the air is moist, especially in wet seasons, are unfavorable to the health of sheep. In wet seasons, they should be kept in the highest and driest lands; for a dry air is peculiarly congenial to the healthy condition of these animals.

When disease attacks your flock, endeavor to ascertain the cause or causes which produced it, whether it arises from plethora, or redundancy of blood in the system; infection; improper feeding; humidity of the air; or extreme heat or cold; this being discovered, you can the more readily apply the most proper remedies, and materially lessen the violence of the disease. This plan will also enable you the better to prevent its recurrence.

The best way of obtaining information, is, when any of your animals drop, to open it, or get it opened, in order to find out the nature and seat of the complaint; by which means, the shepherd, in future, will be the more readily enabled to put a stop to the fatality of the disease.

Most of the diseases to which sheep are subject, are, as we have observed, similar to those of neat cattle, and require a very similar treatment: generally speaking, also, the same medicine may be administered to the one animal as are directed for the same complaints in the other, but in less quantity; a sixth part of the quantity given to neat cattle, being a fair proportion for sheep.

The quantity of blood proper to be taken from a sheep, must depend upon the habit of the animal, and nature of the disease; from eight ounces to a pint being generally sufficient; but in plethoric or inflammatory disorders, a pint and a half, and even a quart will not be too much. When it is necessary to repeat bleeding in sheep, it will be best to reduce the quantity taken each time. Three or four ounces is usually found sufficient to be taken from a young lamb.

Sheep and lambs are sometimes bled in the vein, below the eye, and in the nose: this may, perhaps, be

the best, where the complaint affects the head of the animal; but where it is necessary to relieve or reduce the system, it is much better to bleed them in the neck, as neat cattle usually are. The blood should be caught in a basin, that the proper quantity may be readily ascertained.

The diseases of young lambs are most frequently owing to want of proper support, improper diet, or undue exposure to wet or cold weather, which debilitates the animal system, and induces frequent and severe colds.

We need not here repeat what we have said of the choice and management of neat cattle, being equally applicable to sheep; but a summary of the principal directions will be certainly useful.

In purchasing sheep, select those reared from the healthiest and best stocks.

Choose those in preference which have been fed upon poorer or barer pastures than your own: but be careful not to place them at once upon land much superior to that to which they have been accustomed.

In very wet weather, they should be sheltered, particularly in the night, and a little good dry hay given them; and in snowy weather, or severe winters, they should be housed, and properly tended and fed.

In all cases where disease attacks them, be prompt in ascertaining the cause, and ready in administering the proper remedies; as many of the diseases of sheep begin and terminate in a few hours.

OF THE LAMBING SEASON.

This period must of course depend on the time when the ram is put to the ewes; but, generally, the latter end of February, or beginning of March, is considered the best time; as the lambs then produced, if properly reared and tended, are much the strongest. Still this is often an inclement season both for the ewe and the lambs, especially if they have been badly kept before yearning. The consequence is, a severe loss is often sustained both among the ewes and their offspring.

Should the dam not have had sufficient support for herself, the lamb will necessarily be poor and weakly at the time it is yearned. It is therefore essential, that every care should be paid to these animals, which nature and the season of the year may render necessary. About six weeks before lambing, the ewe should be supplied with plenty of good food, in order that nature may provide for the offspring at the appointed time. If attention be paid to these particulars, the health and strength of the parent animal will be insured, and it will be better enabled to go through the difficulty of parturition; the lamb, also, will be in better condition, and more likely to survive any severity of season which may follow.

Every person who would be successful in rearing sheep, must be provided with a fold yard, suitable for the purpose; this may consist of a small plot of ground; well protected from the north-east and westerly winds, with a suitable shed and a fire place in it, and other conveniences for the purpose. Thus the shepherd will be able to attend them at all hours of the night, to give his assistance when required, and to take all needful care of them.

It often happens, during the lambing season, that ewes are severely handled through the largeness of the lambs, or their being in a wrong position, so as to bruise or tear the parts through which they pass. It will be necessary to have in readiness, for use at these times, the following oils:

Recipe.—Venice turpentine, two ounces; Barbadoes tar, two ounces; spirits of turpentine, quarter of a pint; linseed oil, half a pint; mix them well together; then add the following: Mel-Egyptiacum, one ounce; oil of vitriol, quarter of an ounce; aquafortis, quarter of an ounce; mix these together; then add, tincture of myrrh, quarter of a pint; shake the whole well together, and put them into a bottle for use.

Whenever it is necessary to use these oils, let the bottle be well shaken, and convey one or two table-spoonsful into the vagina, or sheath, either by the

hand, or with a spoon. They warm or stimulate the parts affected, and prevent or cure the gangrene or mortification in those parts, as well as in other fresh wounds.

When ewes are injured by a difficult parturition, the following drink will prove of excellent service:

Recipe.—Peruvian bark, powdered, one dram; ginger, powdered, one dram; mix them in half a pint of warm gruel, and add, treacle, two spoonfuls; brandy, one table spoonful; mix, and give it new-milk warm.

It is frequently necessary to repeat this drink once or twice a day, where the animals have received much injury, or where they have been reduced by indifferent or scanty keep before the lambing season. In every case, where nature appears to be in a languid and debilitated state, these powders are unequalled for their restorative quality.

The gruel necessary to be given to ewes at the time of lambing, should be made as follows:

Recipe.—Linseed, fresh powdered, half a pound; oatmeal, one pound; boil a sufficient quantity of this mixture in water, as if made of oatmeal only; then add, gin, or brandy, one tea-spoonful; sugar, one tea-spoonful.

This will give excellent support to the animals, and will nourish and heal their insides, through the richness of the linseed in combination with the oatmeal. About half a pint, to a pint, of this gruel, may be given at the time, and repeated twice in the day, if necessary.

If the ewe be deficient, in milk (a circumstance which occasionally happens at the time of lambing, for want of better support,) let the following drink be given, which will be found greatly to assist the secretion of that fluid.

Recipe.—Aniseed, sweet fennel seed, caraway seed, and grains of paradise, fresh powdered, each, one dram; mix, and give it in half a pint of warm gruel.

This drink acts as a cordial, and powerfully promotes the milky secretions, at the same time it warms and stimulates the stomach and intestines. But to insure success, take care the ingredients are all fresh and good. Never buy seeds in powder, but always pound them yourself.

OF THE DISEASES TO WHICH LAMBS ARE SUBJECT.

Lambs are in their infancy subject to a variety of diseases, arising either from them or their dams being insufficiently kept, or from the cold or damp state of the weather.

If the weak state of the lambs proceed from poor keeping, support must be given them; this may be done either by putting them to suck other and stronger ewes, or by giving them cow's new milk, warm as it comes from the animal; but if the complaint arise from cold or damp weather, in addition to the warm milk, the drink should be given as afterwards directed, and the lamb should with its dam, be housed and carefully nursed.

Sometimes, though rarely, the ewe has too much milk; when this is the case, it is apt to coagulate and form into a hard substance in the udder, by which many of the best lambs are frequently carried off.—This is similar to the *cords* in calves, and may be arrested by a similar treatment. With respect to the quantity of medicine to be given, a fifth or sixth part of that directed for the calf, may be safely administered to the lamb.

DIARRHOEA, OR EXCESSIVE LOOSENESS IN LAMBS,

Is a destructive malady, and most fatal to lambs under a week old, it often seizes them at about twenty-four hours old, and carries them off in six hours after; it mostly, however, lasts two days, in which time it kills five out of six that are attacked with it, except proper remedies are administered at its very outset.

Symptoms.—This disorder commences with frequent purging, and severe griping pains; and the lamb is generally much blown up on its attack, from

wind in the stomach and intestines; if no relief be given, the disease becomes stationary, and the stools are attended with a copious ejection of the mucus of the intestines, together with a griping pain, while the animal pines rapidly away.

Remedy.—The cause from whence the complaint originated, must be ascertained, if possible. If it proceeded from cold, or want of proper support, new milk warm from the cow should be given, the lamb should be kept warm, and the following drink administered:

Recipe.—Dover's powders, twelve grains; compound cinnamon powder, two scruples; prepared chalk, one scruple; mix, and give it in a little warm new milk, thickened with starch to the consistence of gruel.

If the ewe's milk seems to disagree with the lamb, it will be proper to change her diet, and, in some cases, to feed the lamb altogether on cow's new milk, warm; not neglecting, however, to milk the ewe. The ewe should be also purged once or twice by giving the following:

Recipe.—Epsom salts, two ounces; elixir of vitriol; a tea-spoonful; mix the salts in a small quantity of water; then add the elixir, and give it.

The drink is proper for a lamb of from twenty-four hours to a week or two old; it should be repeated every three or four hours, until the symptoms be greatly abated, and then, should the diarrhoea continue, once a day will be sufficient.

After giving one or two of the above drinks, it is often of great use in severe cases, to add two or from that to four grains of calomel to it, and repeat this every day for two or three times; or a table-spoon *half-filled* with castor oil may be given with the drink.

A strong lamb, six weeks or two months old, will require the following:

Recipe.—Dover's powders, half a dram; compound cinnamon powder, one dram; prepared chalk, two scruples, to one dram.

At this age, however, the diarrhoea is commonly not so fatal; and, if taken in time, will generally yield to the following draught—

Recipe.—Castor oil, one table-spoonful; laudanum, forty to sixty drops; mix in a little warm weak gin and water, and give it.

When *Diarrhoea* attack lambs that are weaned, and from that time to six or seven months old, it mostly arises from the nature of their food, or from taking cold. A change of pasture will often in this case, prove a remedy: Mr. Clayton, in his treatise on the diseases of cattle, says, he knew frequently that when lambs of this age, afflicted with diarrhoea, were removed into a stubble corn-field, this at once put a stop to the over-purging. To animals of this age, the following cordial drink may be occasionally administered with advantage:

Recipe.—Prepared chalk, eight ounces; anniseeds, fresh powdered, one ounce; caraway seeds, powdered, one ounce; ginger, fresh powdered, one ounce; mix the ingredients well together in a mortar, and once or twice a day mix a small table-spoonful of the mixture in a little warm milk, thickened with flour or starch; give it together with forty drops of laudanum; and in obstinate cases, repeat the dose again in the same day. By a careful adherence to this simple treatment, a speedy cure may be generally expected.

COSTIVENESS IN LAMBS.

Is mostly accompanied with slight symptoms of fever; the lamb appears dull and heavy, and eats little; after its recovery, the wool generally comes off.

Remedy.—The cure is easy and simple; give the lambs from half an ounce to an ounce, according to its age, of epsom salts, dissolved in a little water; or a table-spoonful or two of castor oil, which the shepherd should always have by him. If the lamb be much affected, bleeding them will be proper. Should it not take sufficient support, give it warm water gruel, which will not only nourish it, but cool the body, and moderately relax the bowels.

STAGGERS IN LAMBS.

This disorder attacks the most thriving, and often proves fatal, especially to those about three or four months old.

Symptoms.—The lamb is giddy, falls down, and in general cannot rise again without help, or until it is relieved; convulsions sometimes succeed, and the lamb seems much distressed.

Remedy.—As this disease proceeds generally from a determination of the blood to the brain, bleeding must be had immediate recourse to, and the following purgative drink be afterwards administered.

Recipe.—Epsom salts, one ounce; elixir of vitriol, half a dram; dissolve the salts in a little water, add the elixir, and give it the lamb at once.

After the operation of the drink, the following ball should be given to the lamb, taking care to keep it well housed:—

Recipe.—Calomel (according to size or strength) three to six grains: true gentian, in powder, half a dram; syrup, enough to make a ball; the ball, with the purgative drink, may be given to lambs whenever they are indisposed, if the complaint be not attended with purging.

HORTICULTURE.

(From the New York Farmer.)

ORNAMENTAL CURRANT BUSHES.

It would be well for florists in this vicinity to supply themselves, as undoubtedly they will, with the new variety of currants mentioned below:

Among the great number of flowering shrubs introduced during the last three or four years into Great Britain, none, perhaps, exceed in beauty the different varieties of the currant family. To those who are accustomed only to the common currants and gooseberries grown in our gardens, the idea of the blossom of the currant ever being beautiful may seem preposterous, but those who have seen the *ribes sanguineum* covered with flowers, must allow very few hardy shrubs can surpass it. This shrub, which, in its leaves &c. very much resembles the common black currant, has blossoms of a most beautiful deep rich scarlet. They resemble in shape those of the common currant, but both the spikes and the tubular flowers with which they are covered are much larger, and, from their brilliant color, they have a most splendid appearance. The fruit is indifferent; it is large and quite black, resembling, both in taste and appearance, a large bilberry rather than a currant. The shrubs are quite hardy, and grows readily from cuttings.—Though it has only been grown a few years in this country, one in the Earl of Rosslyn's garden, at Dysart, is already eighteen feet in circumference, and six feet high, and bore last spring eight hundred and thirty-six clusters of flowers. The *ribes sanguineum* so closely resembles the black currant, that a nurseryman who obtained some seeds, some years ago, without knowing what they were, thought the plants, when they came up, were only common currants, and threw the greater part of them away. The shrubs was brought from North America, and may now be had from any nurseryman. The *ribes aureum* is a yellow blossomed variety of currant, which was brought into England in the year 1815. There are two kinds of this variety, one bearing white and the other red fruit. Several other currants have handsome blossoms, but these are the most striking varieties. The *ribes speciosum*, which was first raised in England in 1829, is an extremely showy plant, having the entire habits of the gooseberry, but with beautiful flowers resembling those of the *fuelsia*. A specimen of this magnificent shrub, in the garden of A. B. Lambert, Esq. is now about five feet high, and it blossomed for the first time in May last, continuing in flower for more than six weeks. Its profusion of

large crimson glittering blossoms, contrasted with its bright green glossy leaves, rendered it one of the most beautiful objects imaginable. It may be a useful hint to give to amateur gardeners, to observe, that if the blossoms of all kinds of flowering plants are cut off the moment the petals drop, without suffering them to form seed, the plants will be strengthened, and will continue much longer in flower.

(From the New York Farmer.)

JERUSALEM ARTICHOKE.

Although this vegetable is generally known in this country, still it is questionable if a full and satisfactory experiment was ever made. We make the following extract:

"I was determined to prove whether or not they could be cultivated to greater advantage than the potato, as food for cattle. One sack was consumed by a young calf at hand; it ate them with avidity, and improved on them. I took the other two sacks and planted them in the midst of a five acre piece of potatoes. I set them whole without cutting, measuring correctly an eighth part of an acre; the produce was in proportion to six hundred and forty bushels per acre—the potatoes three hundred and twenty-seven bushels. The following year, the memorable one of 1826, I planted half an acre on a piece of thin gravel, old tillage land, in its regular course of preparation for a vegetable crop after wheat; they maintained their verdure through that extraordinary dry summer, and produced one hundred and fifty bushels; but the potatoes by the side of them were completely set fast; they never formed a bulb. The year following I set an acre on part of the same kind of soil, but of better quality; it produced five hundred and seventy bushels *without any dung*. An half an acre on the same land, with the usual quantity of dung for turnips, produced two hundred and ninety-bushels (a bad compensation for eight loads of excellent dung.) This present season, an acre on the same land (part of my turnip-fallows) produced five hundred and seventy-six bushels; but the wet state of the soil when taken up, and being a vegetable of uneven surface, which causes the soil to adhere to it more than to a potato, renders it difficult to come at the exact quantity. From an experiment I made of washing a sack, I can safely assert, I have five hundred and thirty bushels of clean roots; whilst the vegetables on our flat gravels do not equal this by full fifty per cent. in value, except the potato, which produced three hundred and eight bushels on the same soil. I could never raise more in favorable seasons.

"The cultivation of the artichoke is the same as of the potato, except that it requires to be set early—not later than March; if laid above ground all winter, it is proof against the severest frost. When once cleaned, no weed can live in its dense shade; horses, beasts, and sheep, consume it with avidity; pigs prefer a potato to it in its raw state, but prefer the artichoke when boiled or steamed. It attracts the game in a most extraordinary way; they resort to its shade in autumn; it forms one of the finest covers in nature. We are so fortunate as to have but little game in our lordship; I do not recollect ever having seen even a Swedish turnip bitten by a hare or rabbit, notwithstanding they will consume the artichokes left by the men in securing them.

"If potatoes can be profitably cultivated as food for cattle, compared with Swedish turnips, mangold wurzel, the sugar beet, &c. (which I much doubt,) the artichoke is vastly superior to them. The expense of culture is no more; it is not liable to be injured by frost; can be taken up at pleasure; it produces at least thirty per cent. more, and on poor land full fifty per cent.; is far more nutritious, and leaves the land perfectly clean. The only objection that can be urged against their cultivation for cattle in competition with potatoes is that they require more care in taking them up. The frost not acting upon them so as to destroy

vegetation; what are missed will, of course, grow amongst the succeeding crop, but I have found very little inconvenience in this respect. D. L.

TO HOP GROWERS.—The New York papers inform us that American hops have been tried in Holland, and have obtained a decided preference to the English. 2,388 bales have already been exported this season, and they command a high price in this vicinity, being sold in New York at 19 and 20 cents per pound. It is probable that this will become an article of regular and extensive exportation.

RURAL ECONOMY.

(From Cobbett's Cottage Economy.)

DRESS, HOUSEHOLD GOODS, AND FUEL.

In a former paragraph, I said, I think, enough to caution you, the English laborer, against the taste now too prevalent, for *fine* and *flimsy* dress. It was, for hundreds of years, amongst the characteristics of the English people, that their taste was, in all matters, for things solid, sound, and good; for the *useful*, and *decent*, the *cleanly* in dress, and not for the *showy*. Let us hope that this may be the taste again; and let us, my friends, fear no troubles, no perils, that may be necessary to produce a return of that taste, accompanied with full bellies and warm backs to the laboring classes.

In *household goods*, the *warm*, the *strong*, the *durable*, ought always to be kept in view. Oak tables, bedsteads and stools, chairs of oak or of yew tree, and never a bit of miserable deal board. Things of this sort ought to last several lifetimes. A laborer ought to inherit from his great grandfather something besides his toil. As to bedding, and other things of that sort, all ought to be good in their nature, of a durable quality, and plain in their color and form. The plates, dishes, mugs, and things of that kind, should be of *peuter* or even of wood. Any thing is better than crockery ware. Bottles to carry a-field should be of wood. Formerly, nobody but the gypsies and mumpers, that went a hop-picking in the season, carried glass or earthen bottles. As to *glass* of any sort, I do not know what business it has in any man's house, unless he be rich enough to live on his means. It pays a tax, in many cases, to the amount of two-thirds of its cost. In short, when a house is once furnished with sufficient goods, there ought to be no renewal of hardly any part of them wanted for half an age, except in case of destruction by fire. Good management in this way leaves the man's wages to provide an *abundance of good food and good raiment*; and these are the things that make happy families; and these are the things that make a good kind, sincere, and brave people; not little paupers about "loyalty" and "content." A good man, will be contented fast enough, if he be fed and clad sufficiently, but if a man be not well fed and clad, he is a base wretch to be contented.

Fuel should be, if possible, provided in summer, or at least some of it. Turf and peat must be got in summer, and some *wood* way. In the woodland countries, the next winter ought to be thought of in *June*, when people hardly know what to do with the fuel wood; and something should, if possible, be saved in the bark harvest to get a part of the fuel for the next winter. Fire is a capital article. To have no fire, or a bad fire, to sit by, is a most dismal thing. In such a state man and wife must be something out of the common way to be in a good humor with each other, to say nothing of colds and other ailments which are the natural consequence of such misery. If we suppose the great Creator to condescend to survey his works in detail, what object can be so pleasing to him as that of the laborer, after his return from the toils of a cold winter day, sitting with his wife and children round a cheerful fire, while the wind whis-

bles in the chimney, and the rain pelt the roof? But, of all God's creation, what is so miserable to behold or to think of as a wretched, half starved family creeping to their nests of flocks or straw, there to lie shivering, till sent forth by the fear of absolutely expiring from want?

MISCELLANEOUS.

THE FARMER.

All the toils of summer o'er,
Peace and plenty round his door,
Who on earth so blest and free
As the Farmer?—Like the bee,
All the sweets of life are his—
Large and full his cup of bliss—
Who can envy thrones to kings,
When the Plough such treasure brings?

See his works with profit crown'd—
Barns with hay-stacks huddled round,
Like a family, whom fear
Draws within a circle near;
Stately steeds and cattle neat,
Cribbs of corn and mows of wheat.
Thickly peopled is his fold—
Harmless sheep and lambs behold,
Like the Christian 'midst the din
Of a noisy world of sin—
Fowls oviparous cackling round,
Pois'd with one foot on the ground,
Meet their master as he comes,
Cluck their wants, and shade their plumes.
When at midnight all is still,
Hear the geese with voices shrill,
At the slightest thought of harm,
Raise the tocsin of alarm;
While from all the barn-yards round,
Echoes back the screaming sound.

See the lofty turkey-cock,
Monarch of the feather'd flock,
Like a haughty potentate,
Strutting round the yard of state,
Filled with anger fierce and dread,
At the sight of daring red,
Swell'd and gobbling as he goes,
Dire destruction on his foes;
But like other tyrants, he
Soon will loose his head, you'll see.

Ere the morn unlocks her doors,
Whence a stream of day-light pours,
Ere the bacchanalian goes
From his cups to seek repose,
Hear the game-cock's clarion peal,
Breaking sleep's mysterious seal,
Like a summons from the skies,
Calling mortals to arise:
While each faithful sentinel
Answers loud that "all is well."

Industry obeys the call,
Rises, hastens to the stall,
And replenishes with food
All his stock, and all his brood,
Who around him gladly fly
To a bountiful supply.
Back the husbandman returns:
Where his fire now briskly burns,
Where the partner of his joys,—
Ruddy girls, and healthful boys,
Kneeling with him round the chairs,
Send to heaven their matin prayers!
Thus the year with him begins,
Thus the race to heaven he wins.

The reason why more homage is paid to wealth than to wisdom, says a Russian poet, is because one can borrow wealth, but not wisdom.

(From the New Haven Examiner.)

EDUCATION.

"The American parent does an injustice to his child which he can never repair, for which no inheritance can compensate, who refuses to give him a full education because he is not intended for a learned profession. Whatever he may intend, he cannot know to what his son will come, and if there should be no change in this respect, will a liberal education be lost upon him because he is not a lawyer, a doctor, or a divine? Nothing can be more untrue or pernicious than this opinion. It is impossible to imagine a citizen of this commonwealth to be in any situation in which the discipline and achievements of a liberal education, however various and extended, will not have their value. They will give him consideration and usefulness, which will be seen and felt in his daily intercourse of business or pleasure; they will give him weight and worth as a member of society, and be a never failing source of honorable, virtuous, and lasting enjoyment under all circumstances, and in every station of life. They will preserve him from the delusion of dangerous errors, and the seductions of degrading and destructive vices. The gambling table will not be resorted to, to hasten the slow and listless step of time, when the library offers a surer and more attractive source. The bottle will not be applied to stir the languid spirit to action and delight, when the magic of the poet is at hand to rouse the imagination and pour its fascinating wonders on the soul. Such gifts, such acquisitions, will make their possession a true friend, a more cherished companion, a more interesting, beloved, and loving husband, a more valuable and respectable parent."

WOMAN.—The celebrated Fontenelle said that women have a fibre more in their heart, and a cell less in the brain than men.

As the dew lies longest and produces most fertility in the shade, so woman in the shade of domestic retirement sheds around her path richer and more permanent blessings than man; who is more exposed to the glare and observations of public life. Thus the humble and retired often yield more valuable benefits to society than the noisy and bustling satellites of earth, whose very light of unconcealed enjoyment deteriorates and parches up the moral soil it flowers over.—*N. Y. Star.*

A lady having the misfortune to have her husband hang himself on an apple tree, the wife of a neighbor immediately came to beg a branch of that tree, to have it grafted into one in her own orchard, "for, who knows," says she, "but it might bear the *same kind of fruit*."

HEATING STOVES.—The wood used in closed stoves should be sawed to the length of three or four inches, and put as near the door or draft as possible; one or two sticks, if placed parallel to the door, will produce a much greater body of flame, than if placed in the usual direction.

SHORT vs. LONG.—Says Long to Short, how are ye, Top? "Top," repeated Short, "I had rather be as small as a Top, than long enough to require six hours to get asleep *all over*." "You had, ha? Well, I had rather be ten hours getting asleep, than so short as to be obliged to mount a cabbage leaf to hiccup."

Kepler says the earth is a huge animal, that has blood and bones and hair and horns; that the trees are its long hair, the grass its fur, the mountains are its lungs, volcanoes its nostrils; minerals are its diseased portions, and that animals, including us poor mortals, are but lice—its breath is heard in the wind, and its groans in the earthquake.

BALTIMORE PRICES CURRENT.

THE MARKETS.—There is scarcely any such thing as a market at present. There being no material change since our last, and an unusual demand for advertising, we give up our space chiefly to the latter for this week.

A CARD.

I am well prepared to serve my customers and friends with all articles in the Seed, Implement, and Domestic Animal line—also with all kinds of trees, plants, &c. Orders should be sent immediately, and all those for Clover, and Grass Seeds, and for Implements, must be accompanied by the cash or an order to draw, on delivery of the articles. J. I. HITCHCOCK.

TO THE PUBLIC.

J. S. EASTMAN, begs leave to tender to the public his grateful acknowledgements for their liberal encouragement to him during the twelve years he has been engaged in this city in manufacturing Agricultural Implements. He has been gradually extending his business from its commencement, and for the last four years, public patronage has been greatly extended towards him, which has induced him during the last season to increase his establishment by the erection of extensive shops and machinery, with the addition of steam power, and he is now prepared to receive orders for any machinery required in the agricultural line, it being his object to confine himself principally to the agricultural interest. He has on hand a general assortment of implements of Husbandry, which he feels assured, are manufactured of as good materials and the workmanship as faithfully executed as any in this country. His patent Cylindrical Straw Cutters have stood the test of twelve years, and now about five hundred are in operation, and he challenges its superiority; all sizes, from \$30 to \$90, will be kept constantly on hand ready for shipment. Also Fox and Borland's Threshing Machine, which has thus far greatly exceeded his most sanguine expectations—he has put nine into operation during the last harvest, and each has given perfect satisfaction. Wheat Fans of superior workmanship—prices \$25, \$28 and \$35.

Being the first to introduce Gideon Davis' Improved Patent Ploughs in this city, and having an extensive demand for them, he confines himself more particularly to them than to any other kind, keeping always a full supply of them, with wrought and cast shares; yet he has a variety of other kinds that may be preferred by some persons. Every variety of useful farming implements will be kept constantly on hand, and he will take special care to have them manufactured by himself of prime quality.

SEED DEPARTMENT.

Having again taken the agency for the Messrs. Landreth's, of Philadelphia, he will shortly be supplied with an assortment of their valuable Garden Seeds, which are already well known to the public. He has also a stock of Garden Seeds on hand, which may be relied on as genuine.

Likewise all kinds of Grass Seeds will be kept in store, when they can be procured of prime quality.

Orders for Cloverseed will meet prompt and particular attention, if accompanied by the cash, it being a cash article with very small profit.

He would remind the public that many articles which are rare and scarce, are often ordered when they cannot be furnished, and many communications are made to such establishments in which the proprietor can have no interest further than to afford such information to his correspondents as may be in his power, in such cases it is expected that the letters will come post paid.

N. B. It is the desire of the subscriber, in order to save trouble, to confine himself to a cash business in future, particularly in small amounts. J. S. E.

NOTICE.

I will sell my farm on South river, at private sale. It contains upwards of a THOUSAND ACRES, and possesses more advantages than most farms. Any information which may be required will be afforded to those who will call upon me at my residence in this city, where I am always to be found.

RICHARD HARWOOD, of Thos.

Annapolis, Feb. 12, 1834.

MARYLAND AGRICULTURAL REPOSITORY.

Agricultural Implements, Seeds, &c.

SINCLAIR & MOORE, corner of Pratt and Light streets, Baltimore, tender their thanks to their friends and customers, for the liberal patronage which has been afforded them, and hope to entitle themselves to a continuance of the favor of the public, by gradually rendering their establishment more useful.

Since its commencement in 1821, they flatter themselves that they have introduced many useful improvements in the agricultural community.

Since the last season they have added several new patterns to their assortment of Ploughs, and now offer for sale a stock which comprises all the variety of forms, improvements and sizes, which they conceive to be essential to the different purposes of the farmer, and will be sold at wholesale or retail, at as low prices as articles of equal quality can be afforded in this market.

Extra castings made at our foundry to suit all the various kinds of ploughs, and furnished at reduced prices.

Also, Castings furnished for Threshing machines, Horse powers, and other purposes.

Improved WHEAT FANS,	\$25 00
do do do—extra large,	28 00
Common Fans,	19 00
Box Fans, small size,	15 00

STRAW CUTTERS, 20 inch cylindrical straw cutter suited to horse or water power, capable of cutting from 75 to 100 bushels per hour 70 00

Extra knives, per set 6 00

14 in. box same construction 45 00

Extra knives per set 5 00

11 in. box 27 00

Extra knives per set 4 00

The excellence of these machines, is well attested by those who have used them.

Common Dutch straw cutters, with treadles 7 50

do without treadles 5 00

CORN SHELLERS of the most approved kind 20 00

subject to a discount of 10 per cent for cash.

CULTIVATORS, with wrought and cast tires from 3 50 to 5 50

GRAIN CRADLES, with warranted scythes 4 00

GRASS SCYTHES, ready hung for use.

WOVE WIRE, safes, screens, &c.

Thompson's superior cast steel AXES, and other tools.

Mattocks, Picks, Shovels, Spades, Hoes, Trace chains.

Hames, Straw Knives, Pruning Knives and Chisels.

Bill hooks, Garden reels, &c. &c.

Patent steel manure and hay FORKS, &c.

Clover, orchard grass, timothy, berds, tall meadow, oat, grass, &c. generally on hand.

A liberal discount will be made to wholesale purchasers, and as we intend to confine our retail sales to cash or town acceptances, a discount for cash, will be made on a single plough, or other implement of equal value of our own manufacture.

In the Nursery department, (having the particular attention of R. Sinclair, senr.) we have raised and offer for sale, new Chinese Mulberry (*Morus multicaulis*) so highly recommended for raising silk and for ornament.

Trees of the above are comparatively large and are as correctly raised as any in our market.

Also, GRAPE PLANTS, and cuttings of the Catawba, Herbemont's Madeira, Isabella, Constantia, Bland, Muscadell, Sweet Water Lincol, red Muscat, Golden Chasselas and others.

The two first can be furnished at very reduced prices by wholesale.

They have also, as usual, good thrifty TREES, of Peach, Plum, Pear, Nectarine, Cherry and Apple.

Fine large PLANTS of the genuine red and white Antwerp and other RASPBERRIES.

Currants, Quince, Strawberry, Gooseberry and Filberts.

Trees, Shrubs, Thorn Quicks, Hop Roots, &c. a large stock.

See their new Catalogue for prices, and directions for planting, &c. to be had gratis at their store.

GARDEN SEED department, conducted by R. Sinclair, Jr.

Who offers for sale an extensive assortment of GARDEN SEEDS, nearly all the growth of 1833, many of which are raised at the nurseries and seed garden in the vicinity of Baltimore, under the immediate inspection

of Robt. Sinclair, senr., by constant care and attention seeds are produced of the greatest purity.

In addition to the above, annual supplies of Esulent Vegetables and other Seeds, are imported from several of the first establishments in Europe, the respectability of which warrant a full reliance upon the purity of their seeds.

Priced Catalogues will be furnished to every applicant; and dealers furnished with supplies on the most reasonable terms, by the pound, or in boxes, containing a full assortment of Garden Seeds, neatly papered and labelled.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the season for transplanting, and we remind our customers and friends, that we are ready to serve them.

J. I. HITCHCOCK,

American Farmer Establishment.

REDUCTION IN PRICES OF TREES, &c.

WILLIAM PRINCE & SONS, have determined, in consequence of the pecuniary pressure, to reduce the prices of a great variety of Trees and Plants, where orders are sent for a considerable amount, and all persons who desire Fruit and Ornamental Trees, Flowering Shrubs and Plants, Green-house Trees and Plants, splendid Dahlias or Seeds, will, on applying to them direct, by mail, with a list of the articles wanted, be promptly furnished, with a printed sheet explaining the reduced rates. The Chinese mulberry or *Morus multicaulis*, are now reduced to \$25 per hundred; Apple Trees in great variety \$20 to \$25 per hundred, and \$4 50 per dozen; Pears \$37 50 per hundred, and extra large do. 50 cents each, and fifty thousand are two, three and four years grafted; Peaches \$20 to \$25 per hundred; large Orange Quinces \$30 per hundred; English and Spanish Filberts \$25 per hundred; Gooseberries, finest Lancashire varieties, \$20 per hundred, and large Scotch varieties, \$18 per hundred; large red, white and black English Currants \$16 per hundred; Isabella Grapes, three years old vines \$25 per hundred; and two years do \$20 per hundred; Catawba, Alexander, Winne, York, Claret, York Madeira and Scuppernon \$25 per hundred; Herbemont's Madeira, Troy and Elsinburg, \$30 per hundred; Norton's Virginia Seedling \$35 per hundred. The collection of choice European Grapes is unrivalled; Chinese Ailanthus four feet high \$4 50 per dozen, and larger size in proportion. A reduction is made on a great many kinds of Roses, Pæonies, Chrysanthemums, &c.; double Dahlias of such fine assorted kinds as have been most increased will be supplied at \$3, \$4 50 and \$6 per dozen, according to excellence, and selected by ourselves. The roots can be safely sent to any distance. The new varieties of Flemish and English pears having been early introduced by us, and greatly increased, the prices of the greater part have been reduced, and the trees are mostly of fine size and three years engrafted. The Ornamental Trees and Shrubs of most kinds are large and thrifty, and of double or treble the value of smaller ones, which is a most decided advantage, being a gain of several years in embellishment.

Lincoln Botanic Garden and Nurseries,
Flushing, Feb. 10, 1834.

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THE FARMER.

BALTIMORE, FRIDAY, FEB. 28, 1834

We thank our correspondent, S. Weller, Esq. for his excellent article on the vine and its culture. We have before us besides the internal evidence afforded by the truly practical cast of his various communications on the same subject, a certificate by Governor Burton, of North Carolina, of the success which has attended Mr. Weller's practice as a vine dresser. We therefore cheerfully commend his essays, and his establishment to all who are desirous of furnishing themselves with vines of the best American kinds, and directions for cultivating them.

It so happened that at the moment we received the communication which we this day publish, Mr. W. R. Prince, of the firm of Messrs. Prince & Sons, of Flushing, Long Island, was with us, being on a visit to this city, and he was so kind as to make the notes which we have here introduced in relation to those parts of the essay which alludes to them. These notes are therefore "by authority." Mr. Prince speaks in the highest terms of the Scuppernon grape, as one of the most valuable, in all respects, of our native varieties. Mr. Weller has sent us a small quantity of his vines, of several excellent varieties, which (when they arrive) we shall offer for sale at moderate prices to our customers and friends.

[We publish the following suggestion with much pleasure because we think it a good one. The thought is not new to us. We have *cogitated* a good deal of late on the publication of a series of "Treatises," such as here suggested, in the manner of "Harpers' Family Library," and other of the "Libraries" of the day, to be compiled or condensed from all accessible sources chiefly from those here suggested, to be issued in periodical numbers or volumes, and disposed of by subscription; and when the series of treatises should be complete to arrange them with additions in the form of a dictionary to be called "the American Farmers' Encyclopedia." We are quite confident as to the utility of such a work, but much less so as to the expediency, in respect to remuneration, of the enterprise. We are glad however to see the subject brought before the public, and shall be happy to forward the views of Mr. Lapham, in any way in our power.]

AMERICAN FARMER'S LIBRARY.

MR. HITCHCOCK: Columbus, Ohio, Feb. 20, 1834.

Sir.—I take the liberty of sending you, for publication, (if you think it worthy of that honour,) the following outline of a project, which I should like to have carried into effect, and which could not fail to be highly beneficial to the citizens of the United States.

For many years the agriculturists of our country have been in the habit of recording the results of their observations and experience in short and desultory articles which are now dispersed through a great many volumes of agricultural papers. These essays are in many instances well written, and highly valuable,—and, taken together, they form a body of information whose value is beyond all calculation. Being mostly from the pens of practical men, who write from experience, and who know the facts they state to be true, they can be relied upon with perfect confidence. We have now fifteen volumes of the American Farmer, twelve of the New England Farmer, and perhaps sixty or seventy volumes of other papers of the same kind, all of which are full of information, and essays of this description. But as this matter is dispersed through so many volumes, without order or system, the different subjects treated of being divided, and disconnected, it is almost impossible to trace it out. Much valuable information, it is believed, is disregarded on account of the difficulty of finding it, and from

the fact of its being presented in an unsystematic, and irregular manner.

In order to remove these difficulties, I propose, (and respectfully suggest to those who take an interest in the advancement of agricultural science,) that the whole subject be divided into about fifty parts, and invite fifty different gentlemen, who are qualified, and acquainted with the subject, to write treatises on each separately. Each treatise is to be confined to one branch of agriculture—to be full and complete in itself—written in a plain, clear style,—and in all cases to give the best and most approved views of the subject. The whole should be entirely American,—no compilations from foreign works—but adapted to our own soil and our own climate, and condition.

The first treatise should of course be a kind of introductory or preliminary discourse.—The

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|---|---------------------------------------|
| 2. might be a history of Agriculture. | 19. Farmers' Accounts &c. |
| 3. Present state of agriculture in different countries. | 20. Orchards. |
| 4. On cleaning and improving ground. | 21. Descriptions of Fruits (Pomology) |
| 5. Building—farm house &c. | 22. Rotation of Crops. |
| 6. Buidling—barns, cribs, &c. &c. | 23. Manure. |
| 7. Fencing. | 24. Live Stocks. |
| 8. Hedges. | 25. 26. Horse. |
| 9. Irrigation, draining &c. &c. | 27. 28. Cattle. |
| 10. Geology as applied to agriculture. | 29. Sheep. |
| 11. Agricultural Chemistry. | 30. Dairy. |
| 12. Agricultural botany. | 31. Swine. |
| 13. Vegetable physiology. | 32. Poultry. |
| 14. Entomology as far as is useful in agriculture. | 33. Bees. |
| 15. Horticulture, a general treatise. | 34. Meadows, &c. |
| 16. Gardening—practical treatise. | 35. Hay. |
| 17. Ornamental & Flower Gardens. | 36. Clover. |
| 18. Agricultural Implements. | 37. Wheat. |
| | 38. Corn. |
| | 39. Oats. |
| | 40. Rye. |
| | 41. Barley. |
| | 42. Buckwheat. |
| | 43. Cotton. |
| | 44. Sugar. |
| | 45. Hemp. |
| | 46. Tobacco. |
| | 47. Raising Silk, &c. |
| | 48. Vines and Wine. |
| | 49. Flax. |
| | 50. Housewifery, &c. &c. |

An agency should be established at some central place, say at Philadelphia, whose duty it should be to receive these Treatises, and after submitting them to a board of agriculture, for their approval, attend to their publication. They should be published in volumes of from 250 to 300 pages, and of the size called 12mo. Each volume to be accompanied by a copious index. They would form what might be called the "American Farmer's Library," and would be a standard work for reference on all occasions, the advantages and value of which will readily be perceived by every intelligent reader. If suitable exertions were made, on the part of the friends of science in our country, there can be no doubt but that the object may be fully attained. Would it not be an honor to our country?

If the editors of other agricultural papers throughout the Union, approve the project, they are requested to give this communication a place in their columns.

Respectfully submitted,

J. A. LAPHAM.

MR. HITCHCOCK: Feaverdam, Va. 2d Mo. 20, 1834.

Sir,—About two years ago I sent a communication to the Farmer, in which I stated that a correspondent of the Farmer from Ohio, many years before, had said, that whenever the thermometer had sunk to five degrees below zero, the blossom buds of the peach tree would be destroyed. As a confirmation of this assertion, I also mentioned the destruction at that time of

the buds of the peach, apricot and vine; the mercury in my thermometer having fallen to eight degrees below zero. In answer to this, it was contended by D. T. a scientific contributor to the Farmer from New York, that unless under peculiar circumstances, such as a sudden change from warm to cold, after the buds had begun to expand, the fruit bud must be as indestructible as any other portion of the tree.

In the correctness of this opinion, I was then induced to concur, especially as a very moderate state of weather of some days of continuance, had immediately preceded the intense degree of cold which had produced so much injury. A similar lowness of temperature, however, to that which I have just mentioned, again occurred on the 7th of last month, and it was followed by nearly corresponding results. In this case, the cold had been severe and continued, almost without intermission from the commencement of winter. The inference, therefore, seems necessarily to follow, that the blossom buds of the peach and some other trees are more perishable, than other parts of the same plants.

The establishment of this fact, however, offers but slight consolation for the deprivation we thereby sustain. But the repeated failures we experience in our crops of apples and peaches, ought to stimulate those who are fond of fruit—and who is not?—to cultivate some other species that are more certain to bear, and which besides come to the table when there is a scarcity of most vegetable productions. What can be more delicious, and more conducive to health than fine strawberries and raspberries?—and what more easily raised? They are scarcely ever injured by frost. A few vines also, of some of the best varieties of our native grapes, would furnish an abundant supply of good fruit for many weeks. They require far less attention than it is necessary to bestow on the exotic vine, and much more liberally repay the cultivator for his pains. Thus in the most unfavorable seasons, we shall never be subjected to total failure; and in those which are more bountiful there will be no probability of our complaining of a superabundance. P.

(From the House Servant's Directory.)

USEFUL HINTS FOR HOUSE SERVANTS.

The best means to preserve blankets from moths is to fold and lay them under the feather-beds that are in use; and they should be shaken occasionally. When soiled, they should be washed, not scoured.

Soda, by softening the water, saves a great deal of soap. It should be melted in a large jug of water, some of which pour into the tubs and boiler; and when the latter becomes weak, add more. The new improvement in soft soap is, if properly used, a saving of near half in quantity; and though sometimes dearer than the hard, reduces the price of washing considerably.

Many good laundresses advise soaping linen in warm water the night previous to washing, as facilitating the operation with less friction.

Soap should be cut with a wire or twine, in pieces that will make a long square when first brought in, and kept out of the air two or three weeks; for if it dry quick, it will crack, and when wet, break. Put it on a shelf, leaving a space between, and let it grow hard gradually. Thus, it will save a full third in the consumption.

Some of the lemons and oranges used for juice should be pared first, to preserve the peel dry; some should be halved, and when squeezed, the pulp cut out, and the outside dried for grating. If for boiling in any liquid, the first way is best. When these fruits are cheap, a proper quantity should be bought and prepared as above directed, especially by those who live in the country, where they cannot always be had; and they are perpetually wanted in cookery.

Cold water thrown on cast-iron, when hot, will cause it to crack.

AGRICULTURE.

(From the Farmers' Register.)

ARABIC WORK ON AGRICULTURE.

University of Virginia, }
Dec. 28, 1833. }

DEAR SIR:

I send you a translation of the first article of the first chapter of the Arabic work on agriculture, compiled by *Ebu Zachari, Tahia, Ebn-Mahomed, Ebn-Jahmed, Ebn-el-Ibram*. This author wrote his work in the sixth century of the Hegira, (the twelfth century of the Christian era,) when culture of every kind flourished most among the Arabs of Spain. He was a native of Seville; and his estate was situated in Alxarafa, where he lived and made his agricultural experiments and observations, to which he added the maxims of a great number of geponic writers of different ages and nations.

The Arabs or Moors, masters of Southern Spain, introduced from Africa and Asia, into their country, and acclimated there, a variety of plants and garden vegetables, before that time unknown in Europe, and for the possession of some of which we are even now indirectly indebted to them.

I am afraid, however, that many errors will occur in my translation of the names of various objects in husbandry—the Spanish translator seems to make his own sometimes a matter of guess-work, and my knowledge of agriculture, botany, geology, and also of the Arabic and English languages is not so very profound, as to be able always to set him right, when he seems to be wrong, and to give myself the most exact and best corresponding word in the English.

From such errors a deal of mischief may arise. Germany is, to this very day, deprived of the enjoyment of one of the finest and most wholesome vegetables—the tomato—because, forsooth, the name of this delicious vegetable had been badly translated into German. The name “tomato” given to this fruit by the Moors, from a superstition concerning certain virtues, which it was thought to possess, being rendered in Spanish by *Manzana de Amor* (love apple) was, from the natural permutability of the lingual letters *l* and *n*, and of the dental letters *z* and *s*, pronounced, and afterwards written, by the Italians *Malsana di Amore*, (insane from love,) and by abbreviation, only *Malsana* (unwholesome or insane) which name the Germans, who received this fruit from Italy, translated, with seeming accuracy, by *tolappel*, (madness apple,) and hence this fruit, though cultivated here and there in Germany, as a curiosity, is never eaten by any one; for who would like to become mad? As it is thought this fruit will make him, who should be rash enough to despise the warning contained in its very name.

However, as I hope, with some degree of confidence, that nothing of this sort will happen to enlightened Virginia, should I even, from my being little better than a mere mimic’s mimic,” commit a similar or a worse blunder, here follows the English translation of the first article of the first chapter of the work, treating of the different qualities of soil, and the signs to know them by.

G. BLEIERMANN.

The first thing to be acquired, in the science of agriculture, is the knowledge of soil, in order to be able to distinguish the good from the inferior; for he who should not know the most essential branch of husbandry, deserves the name of ignorant, not that of farmer.

According to the demonstration of Rasis in his work entitled “Physical Anseultions,” rocks of considerable size become pulverized, by the action of heat and moisture, in the space of a century. Thus, by the continued influence of the sun and rains, on the surface of the earth, a soil is formed proper to admit of vegetation; for earth drawn from wells and other excavations, though it should contain all the apparent qualities of good soil, will be sterile the first

year, but after having been penetrated by the sun and the moisture of showers, it becomes often highly fertile. Thus it is evident that no soil can be productive, unless it be warmed by the sun and penetrated by rain. The earth is naturally cold and dry, yet though this be a natural and general quality of the earth, there are nevertheless some soils warmer and more humid than others. The warmest, and hence the most fertile soil, according to all the most intelligent agriculturists, is the black mold; next to which comes that which is of a red color; whilst the white is the coldest, and hence the least fertile of all, and yellow soil is but little better. So that white soil will be more or less cold, according to the more or less whiteness it has, and the same may be said of the yellow, and in proportion of the other colors respectively.

The best soil, for warmth and moisture, is that which, in its texture and color, resembles old rotten dung; which does not harden into clods; does not dry and crack open in the heat, nor is loose like sand and gravel. But there are few spots where such a soil is found in a natural state, and therefore, we must call good, such soil as only resembles it in some degree.

Abu-Hanifa Dmurita, the prince of agriculture, says: soils whose texture is porous or spongy, and pulverize easily under the plough, or the spade, like sand without their being actually sand, are best adapted for vegetation, on account of their easily imbibing the water from showers or from artificial irrigation, to nourish the roots of plants, which increase and flourish most under a frequent supply of moisture. On the contrary, soils of a compact texture easily hardened by heat, not imbibing moisture, are extremely sterile, for the roots of plants cannot dilate and be nourished by moisture, as they ought to do, to vegetate and grow well.

There are two kinds of soil, both unproductive, the one consists of mere sand, and the other of mere clay: the former, though it imbibes moisture quickly, from its loose texture, causes it to evaporate as quickly, from the surface, or to sink too deep into the ground, before it can profit the plants that are to grow in it; and the latter being at one time too wet, and at others too dry and hard, is equally unfit for vegetation. However, by a proper mixture of these two soils, under good tillage and frequent dunging, both may in time be ameliorated and rendered productive. Such soils are frequent in Mesopotamia, the torrents having washed into the plains not merely the trash and surface soil of the high lands, but also a good deal of clay and more sand.

Solon, says the same of soils, and adds, that soils are good and productive, on account of the combination of heat and moisture they contain, that blackness, in a soil, indicates its being hot, and the redness thereof indicates the same thing, though in a less degree; that yellow soil is least hot, and approaches most the quality of cold soil, and that white soil is what usually is denominated cold soil.

The qualities of soils are known to observers, by evident signs: that which is best adapted for vegetation must be hot and moist, and must, in color and texture, resemble old rotten dung. Next in quality, is that which has a good mixture of fine sand, fat clay, and black mud. That soil which consists of mere sand and gravel, without any admixture of clay and black mud, is very inferior. Clay alone is better than sand alone, as it can be improved with less cost, where sand is high, by an admixture of that article, than sand alone, by an admixture of clay.

Sidagos says: when we examine attentively the different classes of soil, we cannot help perceiving that it is necessary that they should be more moist, rich and porous, than hot, as the sun’s heat may warm them sufficiently for vegetation, whilst, without richness and porosity, the plants would not take root, and consequently, could not grow. Should, however, both qualities, viz: heat and moisture, meet in the same soil, it would be so much the better. Nothing is more true than the opinion of Sidagos on this sub-

ject, says Ahen Hajaj, that black soil is the best, and so all the ancients have considered it, and that the red with a shade of blue is the next in quality, and that such land as contains a good mixture of clay and sand with alluvial mud is also very good.

Democrite says, that such a soil as, in rainy weather, does not swell very much, and in hot weather does not easily crack open, is of a very good quality. However, we know that in the environs of Carmona, the land is very much cracked in summer, and yet they reap larger crops of wheat there, than any where else. Therefore, we ought not to reject such land, unless we can more advantageously cultivate the best kind indicated above. In the black soil, we mentioned, resembling old rotten dung, every thing, either grains, garden vegetables or fruit trees, grows to advantage, whilst, in that having the qualities of the land around Carmona, nothing but wheat will grow.

According to Kastos, the best land is that which imbibes most moisture, and in which grass and weeds are growing luxuriantly, when left uncultivated. Junius Moderatus Columella says: “that land, which is destined to bring garden vegetables, must not be white, coarse-grained, nor easily hardened in the heat of summer. Such land when well ploughed and mixed with dung, may serve to plant an orchard in. For garden vegetables, we ought to choose a soil that contains much alluvial mud, and which you may find out easily by stirring a handful of the soil in a vessel with water. Should you find, from not muddying the water much, that most of it is sand, you must not use it for cultivating garden vegetables, until by a proper mixture of dung and black mud from ponds and rivers, you have rendered it fit for your purpose. You may also know the quality of soil by taking up a part of it in your hand; if, by pressing it, you find it similar to wax, it will be good soil for producing vegetables.

Aben-Hajaj, in his treatise on the different soils, says that some farmers in order to know and judge of the quality of land, make use of their taste and smell; others of their sight and touch, and others again judge of it by the plants that it produces naturally. But the examination of it by the sight and the touch is also subject to little error.

Junius Moderatus Columella, says: soil of a good quality is known by seeing that it easily imbibes the water, becomes after rain soft and slony, without baking or becoming hard afterwards, in the heat of the sun. This same author tells us, that some ancients had discovered another method to judge of the quality of the land, viz: when forest trees of great magnitude grow in it, whose branches are so thickly interwoven that the sun cannot penetrate, this is a sign, that the land is good. On the contrary, when forest trees are only of a middling height, and their branches and foliage but thin, such land on which they grow is but of a middling quality; but should such trees be dwarfish, and their foliage poor, you may be sure the land is poor also.

Those that judge of soil by its taste, will prefer the sweet to that which tastes strongly of salt. And on this subject Columella says, that when taking some earth from a certain depth, you mix it with sweet water, and taste the water when it has become clear, if you find it of a saltish taste, you may be sure that it is good for no other vegetable but palm trees, or at most, for cabbages and cucumbers.

Those who use their smell to judge of the quality of land, say that no soil is good that has any bad smell, and Democrite says, that it is a sign of good land, when excavating it to the depth of two feet, you take a part of the earth from the bottom, and put it in a glass in which some rain water or sweet water from a river had previously been poured, you find, after it has clarified, the water to have neither a disagreeable taste, nor an offensive smell, you may know that the land is of good quality, and will be productive in grain, as well as in vegetables and trees, that you should wish to raise.

Kastos says, that land of a fetid smell, and of a saltish taste, is only good for palm trees. According to Aben-Hajaj, some farmers take for their guide, in the selections of land for tillage, the plants that grow on it naturally, which I think is the surest way of judging of its quality. When they see the large thistle, and the wild hemp growing spontaneously on any land, they pronounce it good without hesitation, for they know that these two kinds of weeds only grow in the very best land. On the contrary, when they perceive any wild *Zaatar* (pennyroyal;) wild sorrel, *Aurula* (poverty grass;) cinquefoil, tribulus and wild wheat? growing on any land naturally, they at once pronounce it poor, and are seldom mistaken in this respect. It is not the same with other weeds, which will grow equally on rich and on poor land, such as the wild onion and others. Some say that rich land, though it should be left for a long time without cultivation, does not so easily grow up in scrubby oaks, pines, cypresses, wild wood, &c. as poor land does when left untilled.

We have now, says Aben-Hajaj, quoted the maxims of different authors, on the qualities of land, with respect to the advantages and disadvantages that farmers may expect from them, and perhaps some will say, that those very soils which these learned authors disapprove of, have been found to be highly suitable to certain kinds of plants, which, besides being produced in them abundantly, are of the best quality. This is undoubtedly true, but such kinds of plants are but few, and commonly of little utility, whilst the most useful plants, such as wheat, barley, beans, peas and other vegetables for the support of man and beasts, can only be raised in such lands as have been approved of by those authors.

According to Solon, in good, moist, rich mold; every vegetable you plant or sow, comes well, and with the assistance of God, prospers and produces a plentiful crop; who would therefore prefer a poor, dry, sandy soil, though lupins may grow well in it? especially when he could have the former with equal convenience. In a good soil will grow all that can be raised in sand; but who would sow wheat on sand, before it has been improved by a great admixture of clay and dung? In sand, we see that pine trees and some species of thorn will grow tolerably well; but who would plant apple, pear, or cherry trees in such a soil? Thus, that land ought to be considered the best in which most things will grow for the food and comforts of man. But some persons will ask: the inheritance which our fathers left us, consists of such a soil as you describe to be naturally poor and unproductive, must we abandon it and seek a better soil elsewhere? My answer is: by no means, but you must by industry, perseverance and judicious management, improve and ameliorate your inheritance, and make it yield, with the assistance of God, abundant crops of every thing necessary for your support, and that of your family; the means of doing so, are within the reach of every intelligent husbandman.

Aben-Hajaj says: though it cannot be denied that apricots, pomegranates and quinces will grow in a poor sandy soil, it is nevertheless a fact, that, if such a soil be improved by an admixture of clay and dung, those trees will yield a larger and more juicy fruit. In the Nabathean Agriculture, treating of the same subject, we find the following expressions by Sagrit: "know that soils are very different and various in their qualities; some are cold, some dry, some moist, others are compact, and others again are loose and porous in their texture. All which farmers ought to know, together with the different plants that suit each respectively, and their amelioration under culture; this latter is the very acme of agricultural science, and the perfection of the art of husbandry."

Adan, of praiseworthy memory, says, "land which is of a dark brown color, imbibing easily the water from rain or from irrigation, without becoming like clay prepared for making bricks, but remaining porous enough for any person to squeeze out the water,

should be pressed a clod of it between his hands, may be considered the best of all." According to *Yambuchad*, the most valuable land is that which, in its color, approaches most the violet. This color is mostly found in land that has been left for some time covered by sweet water, the sediment of which has been incorporated with the soil. In the Nabathean Agriculture, we read: that when rain water remains for a time stagnant in bottoms, after washing down from the high lands, much of the surface soil, the land contracts a violet color, which is always a sign of fertility. But should this water have stood too long, and the earth have become almost blue, it will be some time before, under the influence of the sun, and good tillage it can, with the assistance of God be made to resume its fertility. The land next in quality after the violet, says *Yambuchad*, is that which, in color and substance, resembles ashes, and whose dust is sweet without mixture of other tastes. Next to this comes what Adan, of praiseworthy memory, calls hot soil, one of whose qualities is, that it easily crumbles under the plough, and which is neither too much contracted by heat, nor too much swelled by moisture. Then comes the land of a light gray color: such land is rather hard, yet docile under the plough; with dung, it will bring tolerable crops of grain, but it is not good for fruit trees. Sagrit, however, is of another opinion, in this respect, for he says, that such land is well fitted for fruit trees, which succeed well and bear excellent fruit. My own experience contradicts him.

Red land, especially when it has water convenient for artificial irrigation, in dry weather, is good for all sorts of grain, vegetables and fruit trees, except the palm tree. Such land as farmers call crummy is also good for all kinds of grain and fruit trees, but is unfit for garden vegetables. The author of the Nabathean Agriculture, says: crummy land, is that which holds the medium between fat and meagre land, which we call *sahalat*, (docile or improvable,) and also; such land as has the appearance in hot weather of being sprinkled with white dust, is commonly salt, and consequently, only fit for palm trees, or at most, for barley, beans, peas, and the like. Soil which, on trial, proves to be of a disagreeable taste, may yet be fit for vines, such as melons, pumpkins and other plants that are creeping on the ground; nay, fruit trees, have been known to grow well in it, as well as grains; for garden vegetables of the finer sorts, and odoriferous herbs, it may not be so suitable.

These are the distinctive signs of the good or bad quality of land, which must be chosen or rejected, according to the convenience and profit of him who wishes to cultivate it. Let it be understood, however, that any soil may be rendered productive in time, under a good system of tillage and manuring.

[We feel confident that many of our readers, whether agriculturists or not, will feel obliged to Professor Blattermann, for the foregoing translation, as well as for the short passages from the same work, which we took the liberty of publishing in No. 8, (page 402) from his private letter in answer to our inquiries. It is true that no instruction can be expected from such antique works on agriculture—but it is still highly interesting to learn what opinions prevailed in early ages, and among a people so different in manners and religion from all the now civilized world, and who then possessed all the refinement and learning in Western Europe. The "*Boko of Husbandry*," (extracts of which we presented in No. 6,) which is a similar literary curiosity, was written four hundred years after this work of the Mahometan author, who wrote at a time when our English ancestors were so sunk in ignorance, that to be able to read was a distinction which but few possessed, who were not educated especially for the service of the church.]

LARGE HOG.—Jonathan Corrier, Esq. of Waltham, slaughtered a hog on Christmas day, nine months old, raised on his farm, that weighed, after dressing, five hundred and eighty-three pounds.

(From Goadsell's Genesee Farmer.)

SOWING GRASS SEED.

This is a very important operation, with farmers, during the spring months. Much difference of opinion prevails, with regard to this, as to time, quantity of seed, and manner of sowing it.

As to the time for spring sowing, most farmers prefer sowing grass seed, when the ground is covered with snow, during the month of March. The only advantage to be derived from the circumstance of the ground being covered with snow, is, that the person sowing the seed, can see his own tracks, by which he is saved the trouble of setting stakes. The quantity of seed per acre, can only be regulated by circumstances, as it is generally allowed that light poor soils, require more than strong rich soils. Most farmers sow their seed without mixing it with any other substance, while some prefer mixing it with fine dry sand. We have lately read the description of a machine for sowing grass seed, which, we presume, was a yankee invention. This machine consisted of a small pair of wheels and axle, six or eight feet long, more or less. The axle passed through the centre of a cylinder which was punched full of holes at regular distances. The grass seed to be sown was first to be mixed with dry sand, and put into that cylinder, and the carriage drawn across the field backward and forward, by which the seed would be equally distributed over the whole surface. But in whatever manner grass seed is sown, it is important that the ground should be rolled after it is sown, which will render the surface more compact, and prevent young plants from becoming dried by the sun and air, it also prepares the surface for any after operation. Where the surface is smooth more hay can be cut than where it is rough, and every farmer knows that an even surface is better for ploughing than a rough one.

(From the Genesee Farmer.)

ROOT CULTURE.

We have the pleasure to acknowledge the receipt of a letter from the President of the late *Agricultural Society of Pennsylvania*; and for our present number, select his remarks on the culture of esculent roots as a branch of husbandry. His skill and experience as a practical farmer, entitle his opinions to great respect. We hope hereafter to obtain his method of preparing the ground, and of applying the manure, which may be of importance to us, although there is a greater difference of climate between us, than three degrees of latitude on the same plain would indicate. We wish to learn every particular; for though we adopt the opinion of our friend W. G., that *good land in good order* is necessary for turnips, yet there is room enough, even on this basis, for considerable diversity of practice.

"I have noticed in the Genesee Farmer, an article from Judge Inel on the culture of *turnips*. His object was to show the profitability of that culture. I cultivate a stiff calcareous loam; and in such a soil, long experience satisfies me that the turnip is the only root crop worth attention. It is raised at less expense of labor and manure than any other that I have tried. The Swedish turnip as Judge B. well remarks, will follow a grass crop. The white Norfolk turnip will follow several ploughed crops, such as flax, hemp, rye, or even potatoes. I have thought the soil was rather improved than impoverished by a crop of turnips. I have found them to make excellent beef and mutton.

"I have ceased to raise *potatoes* for live stock. I think good farming, where a certain market is not contiguous, requires the potato crop to go but little beyond table use. I have found them to require heavy manuring; and put in what you may without another dressing, the ground will not be fit for laying down to grass. The boiled potato is a nourishing food for man and beast; but raw, it appears of little

value except as an opening medicine. As food for man in high latitudes, they are the best substitute for bread; and will justify the culture because a given space will produce more, and they are a much surer resource than frumentaceous crops; but in this part of Pennsylvania, even contiguous to the city, they make but a poor return in abundant years, from reduced prices; and in seasons of scarcity the result is not much better, from the expense required to make a crop.

"The *man, old turnip* and *carrot* will do little with us, though in a light granitic loam, I have observed that they succeed better. For stock feeding, the turnip is decidedly preferable. The white turnip feeds well through the month of January, and sometimes later. Indeed I have preserved them quite sweet until March, by covering about fifteen bushels together, and then opening the heaps only as they were used."

DOMESTIC ANIMALS.

(From the Genesee Farmer.)

IMPROVED SHORT HORNS.

Your valuable correspondent, "ULMUS," has introduced to the notice of your readers the subject of stock, in a way well calculated to elicit the views and opinions of those who have given their attention to this important branch of agricultural interest; and it will, I trust, not only awaken a more general attention and inquiry into the value of the respective breeds alluded to, but will lead to a closer examination, a nicer scrutiny, and a more minute investigation of their distinctive characteristics, pretensions, and merits. These being well understood, the very important points of pedigree and descent will be more narrowly looked into, and the excellence of a *pure* and *improved* breed will not be estimated by results obtained from its coarser originals, its half breeds, or mongrels. Every red beast of the field will not claim descent from the elegant and beautiful "*Devon*"—every imported "Short Horn"—every ship's cow with a crumpled horn, will not be palmed off on us for an "*improved Short Horn*"—the vulgar looking overgrown Leicester will not pass as Bakewell sheep, neither will the Hampshire downs be mistaken for the more refined Southdown sheep. In these matters we have been long enough the dupes of our own ignorance; and when we have given them more of our attention, we shall hear less of disappointments, of animals possessing no purity of blood—of mixed breeds and their immediate degeneracy, &c. for the fact is, we shall then depend on *full bred* animals only for the improvement of our native stock, selecting such as are of undoubted pedigree, possessing their good qualities and excellent forms by *inheritance*; and these points, thoroughly established by long descent, from the characteristics of a particular breed which will be assuredly transmitted to their progeny. It is this certainty of *inheritance* from *full bloods*, that renders them so incomparably more valuable to the breeder, than any lesser grade of the same blood—it is this admitted fact that induces men to hazard such large sums of money, as we daily see risked, on the unborn produce of high bred animals; and upon this same principal it was, that when I wished to purchase, from the celebrated breeder, N. Whitaker, the produce of "*Western Lady*" (one of the cows cited by Ulmus,) I found it had been previously engaged to Col. Powel; nor was it at all remarkable that Mr. Whitaker, after I had become acquainted with his herd, should send me, for my selection, the names of seventeen cows, and their time of calving, with the prices of their produce, which varied as much as though the respective merits of their parents had already been identified in their embryo progeny. Another circumstance brought to my notice the importance attached to pedigree, by the breeders of cattle in England. While attending the cattle show,

at Otley, in the West Riding of Yorkshire, for the purpose of purchasing the best individuals I could obtain of the Improved Durham Short Horns, I was offered the *prize heifer* of the day, for less than one half what I paid Mr. Whitaker of Greenholm for younger animals! The heifer, though very beautiful in herself, had but two crosses of the *improved* blood; her grandam being a selected "Short Horn" cow, but not of the *improved* breed; therefore, those excellencies, which obtained for her the premium, were not considered sufficiently established in herself, to secure their descent to her offspring, and thus render her valuable to the breeder, who could obtain others of purer blood, nor was it of frequent occurrence that a minor grade should beat a full blood. The premium, for the best two year old bull, was taken by an "*Improved Durham Short Horn*," bred by Mr. Whitaker, sired by his favorite bull "Frederick," which I now have at Maple Grove. The importance I attach to pedigree, and the desire I have that it should be fully estimated by others, induces me to offer the following extract on the subject from the Rev. Henry Berry's Prize Essay, as found in "*Hints for American Husbandmen*," &c. He states:

"It is possible that a good male may beget a son equally good as himself in *EXTERNALS*, from an ill bred female, but it is certain that such son will prove comparatively an inferior stock getter, it being an established fact that animals *BRED BACK* in point of resemblance, and it is therefore considered necessary, for the object of improvements or to retain excellence, to have a pedigree as little dubious as possible, for several generations. So important indeed is this fact of correct descent, that many breeders, who have, from causes which it is difficult to ascertain, a well bred animal of defective form, venture to use him, relying on his blood, and experience no reason for regret that they have done so."

Having said thus much on the importance of pedigree, I will now remark, in reference to the "*Improved Short Horns*," that no animal can be considered full bred, whose pedigree, *both* on the part of the dam and sire, is not to be traced *uninterruptedly* back to the "*Herd Book*," which has been in England carefully kept as a register of this breed of cattle, with all the exactness of the "*Stud book*." In purchasing *such* cattle, nothing need be said, nothing need be taken on trust—the "*Herd Book*" is the best voucher of pedigree, and I would strongly recommend that a copy should be kept in the office of every agricultural journal as a book of reference, which would enable the editor to answer any and every inquiry on the subject of pedigree relative to the "*Improved Short Horns*."

Short Horns are the prevailing breed of Flanders, part of Holland, and as far north as Holstein; and, from importations, are now the common stock of the north of England, under the various modifications of "Short Horns," "Teeswater," and "Durham" cattle. They were also imported into this country, under the appellation of *Dutch* cattle, and their descendants are common in the neighborhood of Hartford, and through the Connecticut valley; also along the borders of New Hampshire and Vermont, where they were introduced by Wm. Jarvis, Esq. "who after twenty year's experience on the subject thinks they cannot be improved by any cross or any breed of cattle." E. Wolcott, Esq. a skillful practical farmer of Connecticut, it seems, was not of the same opinion; for this gentleman, after purchasing a few heifers from Mr. Jarvis, travelled into Massachusetts, and there saw the imported bulls *Denton*, *Celebs*, and *Admiral*, of the *improved* Short Horn breed, and their offspring; and then, in a letter addressed to the corresponding secretary of the Pennsylvania Agricultural Society, expresses himself fully persuaded of the superiority of these last, and purchased a young bull of the *improved* breed. It would appear, also, that the English breeders, did not remain so well satisfied with their importations from Holland as to "continue to keep the

blood distinct." In tracing the history of the improved Short Horns, we are led back nearly one hundred years, to the time of Sir Wm. St. Quintin, of Scampston, who resided in the north of England, and there introduced, from Holland, the cattle, which crossed with the best stocks of the country, possessed of the same characteristics, became distinguished as the "*Teeswater Short Horns*." That considerable attention to the improvement of this breed had been given, even at this early period, is evident, from the results of Mr. Milbank of Barniaghman, who slaughtered a five year old ox of this breed, weighing 2,110 lbs. the four quarters, and yielding 224 lbs. of tallow. A cow, also bred from his stock, slaughtered at twelve years old, weighed upwards of 1500 lbs. and this cow was the daughter of the *old Studly bull*, one of the most celebrated ancestors of the *improved* Short Horns. He was the grandsire of *Dutton Duke*, afterwards the property of Mr. Wetherill, a celebrated breeder of the *improved* Short Horns. Mr. George Snowden, of early memory, also obtained from Sir Wm. St. Quintin's stock, six cows and a bull, from which he bred *Sawden's Bull*, the sire of *Hubcock*, another noted ancestor of the *improved* breed. It will now be sufficient to say, that in Mr. C. Colling's bull *Foljambe*, the Barniaghman and Hubcock's blood were united, and that this bull was the grandsire of *Conet*, the most celebrated animal in the "*Herd Book*," to which we refer these who would wish to fill up, more particularly, the skeleton, here traced from the Rev. H. Berry's pamphlet on the subject. He further says—"From the time of Mr. Milbank to the period when Mr. C. Colling commenced breeding it appears, then, that considerable care had been bestowed on the Teeswater cattle," the originals of the *improved* Short Horns; and the records, since, most amply prove their continued and improving excellence. Again the Rev. H. Berry observes:

"It is on testimony unimpeachable and experience most matured, that the animals, respecting which particulars have been given, were in themselves extremely good, ripe in points, possessing fine symmetry, and light offal. Surely it is justifiable to conclude the originals of the *Improved Short Horns* were long deservedly celebrated as a valuable stock; that therefore their descendants are *not* a breed, as to excellence, of *yesterday*, liable and likely to *degenerate to-morrow*; but that they possess the important advantage of being descended from a long line of animals in which existed, in an eminent degree, the good points which are admired in themselves."

Being an admirer of the *improved* Short Horns, I have endeavored to set them apart and alone, in contradistinction to the whole Short Horn family, and its various and mixed varieties, and as a separate breed, not coming at all within the remarks cited by "Ulmus," as objections, and valid ones too, against "Short Horn Durham bulls." I could almost imagine the writer of the quoted paragraph, had made his selection of a bull, from a batch of Short Horns, manufactured in Connecticut for the western market, which I saw parading the streets of Albany, (some eighteen months since) in a long and ludicrous procession; they looked the very burlesque of pedigree—and yet, they found purchasers!

(From Goodsell's Genesee Farmer.)

EARLY LAMBS.

The more common practice with farmers in the northern states, is to separate their rams from their ewes, on the first of September, previous to which time some ewes which had not reared lambs that season may have taken him. As the time of gestation is about five months, such ewes may be expected to bring forth about the first of February. It is highly important that such lambs should be reared, both with regard to the present profit, and future prospects of the flock. Where lambs are reared for market, such

early lambs always command a greater price than later ones when they have arrived to the same age. As early lambs are rarely produced by any ewes, but such as were in high flesh in autumn, there is little danger where flocks have been well kept, but that they will furnish plenty of milk for their lambs, and the greatest danger of losing them is by their becoming chilled, before they can get any suck from their dams, for after they are three or four days old, they seem capable of enduring the severity of winter as the old sheep. It is highly important that such ewes should be put in sheltered situations, with plenty of litter and where they may be seen often, so that if a lamb becomes chilled he may be taken to the house and placed near the fire until he is sufficiently warm, to be returned to the ewe. Where the owner is wishing to increase his flock it is important also to rear the early lambs, as they uniformly make the largest and strongest sheep.

It is of the greatest importance to the owners of flocks, that sheep should be well attended, during the month of February. When the ground is covered with snow, it is not sufficient that sheep should be fed with hay, they must have some other food, as turnips, potatoes, mangold wurzel, or some kind of green food that will prevent their becoming costive, which is most sure to be the case, when they are fed upon hay alone. If a flock of sheep are allowed to become costive and feverish, it is sure to affect the wool, and give it a yellow appearance, known by the terms, *hide bound* or *cotted*, which greatly diminishes the value of it; therefore, every farmer that intends making his flock profitable, should consider, that this is one of the most important months in the year, requiring more care with sheep than any other.

(From the New England Farmer.)

WINTERING SHEEP, CARE OF LAMBS, &c.

Give your ewes with lamb somewhat more than their usual quantity of food for a month or six weeks before they are expected to yearn. They should not be fed so as to fatten them, for if they are in high condition they will be more apt to suffer in becoming mothers, and will be less fit for nurses. It is a good practice to give about half a gill of Indian corn a day to each sheep with lamb for some time before and after they have yearned, and roots may be advantageously added after that period. The *Farmer's Manual* says, "If you have stored more turnips than are sufficient for the use of your table, give them to any stock that will eat them except your sheep: give to them potatoes, but not turnips at this season, they will injure the lambs."

If your sheep, whether store sheep or ewes with lamb have good hay, about a quart of potatoes a day to each, will, it is said, be very beneficial, and an ample allowance. But when the object is to fatten them, according to a writer in Rees' *Cyclopedia*, about a gallon of potatoes a day with a little hay will be the proper quantity; but this depends in part on the size of the animals, and in part on the quality and quantity of the hay which is given them. Potatoes, beside their use as *food* for sheep, are said to be very serviceable as an article of diet, which usually supercedes the necessity of *medicine*. They have, when given raw, an opening quality, which is said to answer a similar purpose with sheep, which is effected with swine by brimstone and antimony. Potatoes, baked, steamed or boiled will furnish more nutriment than those which are raw.

Care should be taken to place in the stable small tubs or troughs of water for the sheep to drink in. They will do very well in summer without water, as they feed when the dew is on, but they need water in winter, especially if fed mostly with dry food. "When sheep have colds, and discharge mucus from the nose, good feeding, together with pine boughs given occasionally, will probably cure them; or tar,

spread over a board, over which a little salt is strowed, which will induce sheep to lick up the tar, and this will cure a cold."

"When several kinds of food can be procured, it is right to give them alternately to the sheep at different meals, in the course of the same day; the qualities of one kind aid or compensate those of another. At certain hours of the day, dry fodder should be given, and at others, roots or grain. If there be any danger that the roots may decay, the winter should be begun with them, mixing however some dry food with them, for alone they would not be sufficiently nutritious."

Sheep should have a yard by themselves, its size adapted to the number of the flock. They require shelter overhead, but its sides should not be so close as to confine the air. The rack from which sheep are fed with hay should be upright, so that the seeds, &c. may not fall into the wool about their necks. Under the rack a trough should be fixed, which will serve at once for catching the seeds of the hay, and for feeding the sheep with roots, &c.

If the flock be large, or over about fifty, a separation of it during the winter is desirable for promoting the health as well as the comfort of the animals. The full grown wethers should be put by themselves, and will not require so good keeping as the ewes and last year's lambs. A suitable apartment should likewise be provided for such sheep as by reason of age, sickness or infirmity require extra attention. Sheep require but little if any salt in winter, and there are reasons for believing that a too free use of salt has been the cause of sickness and death in sheep.

M. Tessier observes, that "sheep have been known to be attacked with long and troublesome lameness in consequence of having taken too much salt, which has induced a belief that sea water is poisonous to them; and that his sheep have always been healthy, though he had never given them salt, but he states that it may be indispensably necessary in wet countries."

HORTICULTURE.

THE VINE AND ITS CULTURE.

Brinkleyville, Halifax county, N. C. 1
Mr. HITCHCOCK: Feb. 18, 1831. 5

Having forwarded you some vines for your experimental farm, (as well as for disposal,) I transmit a brief description of the different kinds of grapes I sent. But before this, permit me to make a few general observations on the culture of the vine. That the rearing of vineyards in our country is now becoming a prominent object cannot be denied. Many now have verified the importance of the vine culture, and are zealously pursuing it, who ten years ago thought little on this branch of agriculture, and that little was perhaps to condemn it as unworthy of attention. And we may venture to predict that ten years hence, the number of those having undergone such a change of mind, and practice will have been greatly increased, and that many will then regret, not that they had engaged in this culture, but that they had not pursued it with more of the zeal its importance demands, and commenced it too, at an earlier period; seeing that the older the vines, the more productive and finer the grapes.

May we not venture to predict, that before twice the period just named shall have revolved, a majority of scientific thrifty farmers in the United States, as in foreign vine-growing countries, will have, at least, a few choice varieties of flourishing vines on their premises to afford an article of table comfort and luxury in their families.

I learn, Mr. Editor, from your columns that even, in our northern states, (much less adapted, I suppose, to the vine culture than the southern,) many have succeeded admirably. Perhaps there is not a state in the Union, in which this branch of agriculture does

not claim some attention. In North Carolina several individuals have succeeded to their fullest expectation, or have every desirable prospect of success. I may instance Capt. Burlingham, of Franklin county, who has made, in one season, his five hundred gallons of excellent Scuppernong wine, from a dozen vines covering a quarter of an acre. Mr. Herndon of the town of Oxford, has a very flourishing vineyard of considerable extent, which I was much gratified in visiting last summer. I observed several kinds of grapes, all or mostly all natives of our country; such as the Catawba, Scuppernong and other indigenous varieties. This gentleman, who has cultivated the vine with a praiseworthy zeal, for a few years only, now realizes I understand a very handsome profit—making a number of barrels of wine a season—besides disposing of cuttings to some amount. I might name also, Mr. Maxwell Wilson, of Lincoln county, and the present comptroller of our state, Mr. James Grant, of Raleigh, who have young vineyards of great promise. The Rev. Miles Smith, of this county, for a number of years past, has annually made a quantity of good wine, from the common bunch grape; the vines being the spontaneous production of his own plantation. His plan was simply to preserve when clearing, and suffering to grow and to run on trees, fences, and the like, such bearing vines as he found on his premises. It was with him that the valuable grape, which I call the Halifax, was discovered. But our country, in general, is greatly indebted to a few individuals, who have led the way to success with us in rearing the vine; and who may be called our pioneers in the vine culture. We may instance Mr. Adlum of Columbia District, and Mr. Herbemont of Columbia, South Carolina; gentlemen whose experience and publications have greatly contributed to the success of others in the vine culture.

The last named gentleman with a truly patriotic spirit, has not only by his zealous personal exertions in experimenting upon the best modes of rearing the vine in his country, contributed to free us from dependence on foreign climes for (*impure*) wine; but has publicly made known the results of his experiments, and enriched the columns of the "American Farmer" and other agricultural periodicals, by well written articles on this subject. He has brought into deserved repute the valuable grape that now bears his name, and it is at present, perhaps, difficult to determine, which of the two natives of our clime is superior, all properties considered,—Herbemont's Madeira, or the Catawba brought into notoriety, I believe, by Mr. Adlum.

Both Mr. Herbemont and Mr. Adlum, as well as others of their stamp, deserve the thanks of the American public, as good pioneers, for faithfully pointing out difficulties, or clearing the rubbish from the way of the vine culture.

For it may be observed of this branch of agriculture, as well as others, errors being pointed out and avoided, success follows of course. As, (allowing us to compare matters somewhat dissimilar) individuals of our race, free from *vice* must be supposed *virtuous*; seeing man is an active being, and from the very law of his nature progressive in some course of moral conduct; so by a law in the vegetable kingdom, made by the benevolent Author of all existence, (except his own,) plants of every kind will go *onward* in their growth, *successfully*; provided they find a congenial soil, and no error in that particular or others be committed in their culture. Hence, as writers on public morals often do more good by exposing and thus correcting vice than by commending virtue; so writers on agriculture, we may venture to assert, by pointing out errors to be shunned have done more for the cause than by any other parts of their communications. It would be superfluous, here, perhaps, to draw an inference from the foregoing as to the great (but too little realized) utility of agricultural periodicals. Those land beacons, or farmers' lighthouses (if we may so call them) which are constantly admo-

nishing those engaged in the most important of all temporal pursuits, to shun the rocks and quicksands, that lie in their course, and that are ready to wreck them on the dreary shores of disappointment and poverty.

New measures in husbandry, or new articles of culture, in any district of country, particularly need to be guarded from errors. If not, and failure consequently ensues, it is attributed by ignorance and prejudice, entirely to the novelty of the case or to any cause but the true one. To particularize the disadvantages of error, I will mention an example in my own experience, when first attempting to rear a vineyard. By not knowing then the fact that Scuppernong cuttings, unlike those of most other vines will seldom succeed, I was at considerable loss of time and expense. This loss would have been gained had I known the fact through some agricultural periodical or otherwise, and resorted exclusively to grafting, or to procuring rooted vines of this sort instead of planting cuttings.

We may observe here in regard to vines, that the most prominent error, perhaps, and one that has produced more failures and discouragement than any other, as to rearing vineyards, is that of an improper selection of the kinds of grapes. And it appears to be the concurrent testimony of all who have experimented effectually on the subject in our country, that the most improper selection for a vineyard is that of foreign instead of native kinds. By the by, connected often with this error of selection, is the foreign manner of trimming vines. In our climate, from the intense heat of the sun, reflected upon objects near the ground, close trimming and humble size of the vine will not answer. Or, according to Mr. Herbermont, in his late treatise, vines in this country are inclined to grow tall and large, and it will not do to check too much their native propensity. But whatever may be said of those who may be curious to have a great variety of vines, foreign as well as others, or of those who can afford to spend considerable upon any object of agriculture, without any expected recompense, it appears to be a well established fact, that for profit a vineyard in our country, must for the most part, be composed of native vines. And for satisfaction, as well as profit, indigenous kinds of vines should, we think, be chiefly selected for a vineyard. A farmer cannot be satisfied with a kind of wheat, (however excellent in many respects,) which, after giving much promise by its vigorous growth, and fine appearance, just preceding the expected harvest, is apt to be destroyed by smut, and thus disappoint his hopes. So foreign kinds of grapes are prone to rot, and thus tantalize their cultivator with blasted expectation. After taking some pains with my French vines, having been thus tantalized two out of three bearing years, I value them very little; and were it not that I intend trying the experiment this year of training them over a frame twelve feet high, according to the suggestion of one of your correspondents, Mr. Editor, I would have them grubbed up to give place for native kinds.

I cannot forbear remarking here that if some of that *clannish or sectional* jealousy existing in some parts of our country, not only against those of foreign lands, but against those of different parts of our own common republic, could be transferred to vinous exotics, such a spirit would be less reprehensible, and the rearing of vineyards more free from discouraging disappointments. Foreign vines have had what all new resident strangers should have, that is, a due time of trial as to their virtues or adaptation to usefulness. And since the proper ordinal has found them deficient, I would suggest the propriety of treating them accordingly.

Last vintage, having occasion to visit Halifax town, I took some grapes along as a treat to my friends. While those receiving them were admiring their size and flavor, a gentleman, who stood near, shook his head very significantly, and remarked that a certain

individual of his acquaintance had sunk a considerable fortune by attempting to rear a profitable vineyard. It was inquired what sort of vines he had selected, native or foreign kinds? He replied *foreign*. On this it may be remarked, that, if the gentleman who ruined his fortune as above, had, through some channel of information, seen one sentence in Mr. Adlum's letter to Mr. J. Fries, under date of September 26th, 1828, he might have been saved the catastrophe in question, as well as others saved from incurring consequent prejudices against the vine culture. The sentence is this: "The *foreign* vines I gradually grubbed up, and threw away."

As a contrast to sinking a fortune, and to shew what perseverance will do, with a good judgment benefitted by past errors, we may refer to the tenor of the letter above quoted; by which it appears that Mr. Adlum, in two years, made a clear profit, from his vineyard, (which was of no great extent,) of more than four thousand dollars.

Several kinds of American grapes have their reputation fully established; and some, I understand, are in demand in foreign countries. And it may be presumed that other valuable kinds, and perhaps the most valuable, will yet be discovered in this country. And why not? Are not all kinds of plants, even the choicest cultivated varieties, the spontaneous productions of mother earth, discovered in one and another favored spot? Or, rather has not the all bountiful Creator placed these things on his footstool to be collected and cultivated by man, and for his benefit?

As an instance, Mr. Editor, of choice plants, sometimes procured, with not a little trouble and expense, and at a considerable distance, and at upwards found near at hand of spontaneous growth, I will mention the case of a certain grapevine in my vineyard, or one of the kind I sent you, which for the want of knowing its true name, perhaps, I call the transparent or fragrant. I call the grape by this name, because of its delightfully perfuming, when ripe, the air at some distance around, and of its clear, chocolate color. It was I learn, first brought to this part of the country, from Mr. Prince's garden, Long Island. The same sort of grape, making allowance for improvement by cultivation, has been found of spontaneous growth on my plantation. When clusters were presented me by a servant, as discovered by him on a certain vine along a branch and identified by their delightful fragrance and delicious taste to be of the same kind, as some ripe in my vineyard, I went and examined the vine on which they were found to ascertain by its apparent age, whether it might not be one that had sprung up from seed conveyed by some means out of my vineyard. But the vine appeared older than any of the kind with which it was compared. And since, I have learned, that another vine of that sort has been found in this county quite remote from any of the kind cultivated. I add here in relation to these vines that they are of very luxuriant growth; those in my vineyard of four years old having spread over scaffolding ten feet high. They are also very productive. The berries are considerably larger than the common fox grape; and ripen early here, about the last of July. I should like to know the name this grape has with Mr. Prince* or in Baltimore it cultivated there.

The kind of grape I call Halifax, discovered as above related, needs little said in further description, as I see you have already noticed it in the forty fourth number of the present volume of the "Farmer."

Suffice to add here, that several gentlemen capable of judging, from the luxuriant growth of the vine, from its great productiveness, and from the fine flavor of the fruit, give it as their opinion that, in time, or when its excellencies are sufficiently known it will rival any grape in our country. It ripens here about the middle of August. And so does the Cobswine, or native of Ohio, also before noticed in your

periodical. This grape is much esteemed wherever cultivated. One vine of this kind, (raised from a cutting,) of three years growth, produced more than a bushel of grapes. I say *one*, for (owing to causes I once named to you) I saved one only out of a hundred sent me from Pennsylvania. But other younger ones propagated from this, bear in proportion. The berries are oval, as large as the common fox grape, of a blue color, and spicy flavor; their taste being uncommonly pleasant.

The Pennsylvania Madeira, or as Mr. Smith, late editor of the "Farmer" has pronounced it to be, the Schuylkill Muscadine, is also highly esteemed in Pennsylvania and elsewhere. The berry is round and not quite as large as the Cobswine grape. Neither is the vine of the former as luxuriant in growth as that of the latter. But I can say of both that the vines are very hardy, bear well every year, and the grapes have never rotted or fallen off with me before ripening. The Blue Bunch grape, I sent because it is a good table fruit that ripens early—it is the earliest kind by several weeks that we have here. The berries are somewhat larger than the largest varieties of the common bunch grape, and grow in large clusters; but with us they sometimes rot before maturing.

As to the Scuppernong grape, Mr. Editor, I need not dwell upon its excellencies or manner of cultivation; as I see it has had ample description in your columns of late.

I consider it very well described in your late extract from the "Farmer's Register." I will nevertheless add something both by way of correcting what I consider erroneous in that production, and of answering Mr. Noel's interrogatories.

I consider it a mistake that the Scuppernong will not succeed when grafted upon common kinds of grape vines. I have now flourishing bearing vines of this kind, grafted upon the common Fox and common Bunch grape vines. And as further experimental evidence of the interchangeable nature of vines, (if I may be allowed the expression,) on the same stocks, are also bearing vines of other kinds. These stocks were brought from the woods, grafted and then transplanted. But the stocks I commonly use, on which to graft the Scuppernong, are of the common Bullace or Muscadine vine.

Cador however makes it incumbent upon me to mention here, that I have several times grafted the Scuppernong into native stocks, (or those not dug up or removed), that is on the Muscadine as well as other kinds, without much success.

The scions grew at first very well, but most of them afterwards died. The same has happened in some cases, when grafting other kinds on native stocks; particularly when the stocks were very large. I consider success in grafting, particularly on native stocks, depends on the time of the year they are grafted. And on native stocks, the fall or winter grafting has succeeded better with me, than that of the spring. About Christmas, two years ago, I grafted a number of native stocks, some quite large. Again, in the spring following, I grafted on other native stocks. Those last grafted, sprouted before the first gave any indication of growing. At which time my hired man observed that spring grafting on native stocks was doubtless best. I replied, we must wait a while and see before deciding this matter. Shortly after the others started and grew off very well, and are now flourishing. But most of those grafted in the spring, withered and died through the course of the following summer.

It is doubtless an error that the Scuppernong, either white or black, must to bear, have both male and female vines adjoining; I have several vines of this sort standing by themselves, that have borne abundantly.* One white Scuppernong, near Halifax town, bears

* Mr. Prince states that, the *female* will when standing alone produce fruit, but the *seed* will be imperfect.

very well though there is not another within several miles of it. And I have been credibly informed, that a certain gentleman, in the lower part of this state, has one Scuppernon only, on his plantation, which produces yearly, grapes for more than five barrels of wine, and covers an area of about a quarter of an acre, of poor sandy land.

I find from experience though the cause is unknown to me, that some bearing vines, after removal or transplanting become barren, and that some rooted ones and cuttings, propagated from good bearers, from being placed in too rich a soil or other causes, are unproductive. My remedy for this misfortune is to graft them.

I procured a few Scuppernon scions from Gov. Burton's garden, about the time I commenced rearing vines, which, after being grafted and grown, produced abundance of blossoms, but no fruit. Seeing a statement from Mr. Prince, that the Scuppernon must be male and female, to bear,† I thought it might be correct, as to some variety of the Scuppernon, and that this might be the difficulty, as to the vines in question. But on inquiring, I found that the vines from which the scions came, were procured from one in Raleigh, that stood solitary, I then conjectured that this might be the cause of the barrenness in question. The vines after being procured at Raleigh, and transplanted were, through some oversight, neglected, and being surrounded by weeds, became stunted and dwarfish in their growth. And consequently like other individuals both of the vegetable and animal kingdom, imparted a disease (though not in kind) to their progeny. Scuppernon grapes have ripened with me at different periods, according to the seasons. One year they did not commence ripening till towards the last of September. Last year they began to ripen in August. Different clusters continue to ripen successively for two or three weeks. I would here remark that I have counted sometimes as many as a dozen berries on one stem, but two, three, four and five, are the common numbers. And further, I would suggest that the grapes by being properly put up, will keep a long time, as I have tried. And Capt. Burlington informed me, he had put them up in boxes and sent them to Washington city, and other distant places, and was informed that they were in a good state of preservation when they came to hand. But in this case, they must be picked off the vines instead of shaking to procure ripe berries, as in other cases. I consider there is little danger that the Scuppernon grapes, will not ripen any where in the state of Maryland, or your latitude. I saw a statement of Mr. Prince, of Long Island, regarding the ripening of these grapes, in his place, and if I recollect, they ripened about one year in two.† Now Maryland lies so much farther south that it seems to preclude the idea of danger in this particular, a few words before I close as to the attendance and support of vines. To flourish when young they should have the ground kept loose about them, and free from weeds. They will no more bear neglect in these particulars, than corn or other hoed crops. I have for the most part cultivated cotton in my vineyard. Corn I have found shades the vines too much. Sweet or Irish potatoes do very well to cultivate in young vineyards.

After vines, by their growth, need more support than stakes will afford them, I use cedar bushes, or saplings, with some upper limbs left. These will last, I have reason to believe, several years, or till scaffolding may succeed. To place saplings or posts near vines, I take an opportunity when the ground is thoroughly wet, and with a round stake, prepared for the purpose, by sharpening one end, and passing a pin for a foot to bear upon, about eighteen inches from the sharp end, make a hole, and so insert them sufficiently deep to stand firm.

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* This is not the meaning which Mr. Prince, intended to convey in his "treatise" on the vine.—See last note.

† Mr. P. says that the Scuppernon produces fruit at Long Island, as regularly as any other variety.

I fear, Mr. Editor, I have been too prolix in this letter. But written as it has been, amidst the labors and cares of my farm and vineyard, I submit it to you as it is, to abridge or to use it in any way you may deem best, for the interest of agriculture; whether that be to publish it, or (to borrow a parliamentary expression) to throw it under your table.

With all due respect, yours, &c.

SIDNEY WELLER.

APPLE TREES.

A gentleman in Essex, England, having in his orchard many old supposed worn out apple trees, which produced fruit scarcely larger than a walnut, last winter took fresh made lime from the kiln, slaked it with water, and (without allowing time for its caustic quality being injured by imbibing fixed air) well dressed the trees, applying the lime with a brush. The result was, that the insects and moss were completely destroyed, the old crumpled and fell off, and a new, smooth, clear one formed, and the trees, although some twenty years old, have now a moist healthy appearance. The same treatment may be extended to other fruit bearing trees, and probably with a similar beneficial result.—*Maline Farmer.*

(From the Genesee Farmer.)

RAISING OF EARLY TOMATOES.

To those who are as fond of this delicious vegetable as we are, it cannot be otherwise than acceptable, to know how it may be brought to early perfection.—In this climate, sowed in open ground at the usual season of sowing seeds, it ripens not till September, nor even then if the season proves cold. To have the fruit in perfection, at least two months earlier, during the warm part of the season, when it is the most grateful to the taste and most wholesome, is no unimportant desideratum. The past season I had ripe tomatoes at the fourth of July, and an abundant supply for my table the rest of the summer. The mode I practice is this: in the month of January or February, I sow a small quantity of the seed in a box, which I place in the window in my kitchen, taking the same care of the plants when they come up that I would of a green house plant, to guard them against being frozen. They here grow till the month of March or April, when they are transplanted into a hot bed, a part of them to remain to produce the earliest fruit, and a part to be again transplanted in the open ground, when the season becomes sufficiently warm, to produce a succession. In this way I never fail to have abundance of this wholesome and delicious vegetable, ripe and in fine perfection, at that part of the season when it is most desirable. Those who have green houses might in this way have the plants growing all winter in pots, which, early in the spring taken out of the pots with the ball of earth about their roots unbroken, and planted in a hot bed, would produce ripe fruit by the beginning of June. They would well repay this extra care and trouble. W. W. B.

MISCELLANEOUS.

(From the House Servant's Directory.)

CLEANING KNIVES.

This is another branch of work that requires the greatest care and attention, as your best knives generally have to bear the inspection of a number of tasteful eyes during the course of dinner. Every servant should see that he has proper utensils to do his work with, as you cannot expect to do your work in proper order, if you have not the means to accomplish it with. How many good things are spoiled through bad management of the man, and the want of convenient tools to work with. Now, in order to clean knives and forks well, you must get you a soft pine plank or board: let it be free from knots, and about six

feet long; have feet or standers under it, so as to raise it exactly to the height of your hips, as this is the proportion for you to bear a regular pressure on your knives; then have you a good soft Bristol brick, and rub it a few times up and down your board, then take a knife in each hand and stand opposite the centre of the board, with the backs of the knives towards the palms of your hands, then expand your arms, keeping the blades level on the board, with a quick motion draw your hands to and from you, frequently looking at the side you are scouring, to see when clean. Do not lean too heavy on the blades for fear of breaking them. In this mode you will soon grow tractable, and will shortly be able to clean two dozen where you would only clean one dozen by taking one knife at a time, and scouring it with your one hand. A good set of knives is a valuable thing, and soon spoiled if not properly taken care of by the man who has the charge of them. There is no branch of a servant's business that will gain more credit for him, from ladies of taste, than keeping his knives and forks in primo bono; as they have many spectators.

DIRECTIONS FOR CLEANING STEEL FORKS.

The best method of cleaning steel forks, is to have a deep box or a small keg, the latter is preferable; fill it with fine sand and chopped hay or straw; either will answer the purpose. To do this perfectly, put some of your hay into the bottom of your keg, then put in some sand, and so on, until it is quite full, then, press it close down, and wet it with water, to keep it damp, as it will have more effect in taking the black from off the prongs, as forks often are very black and hard to clean, after having been used in acids, &c.

When you clean them, take two in each hand, and stab them several times in the sand, and so on, until you have them all done; then have an old hard brush for the purpose of brushing the sand from between the prongs; likewise have a piece of buckskin, or an old glove, to polish them off with. This is the true and best method of cleaning steel forks.

Now I shall give you directions for cleaning the handles of your knives and forks, after the blades and prongs have all been cleaned. In the first place take a towel and immerse it in water, then wring it out all but dry; hold this towel in your right hand, with a dry knife towel in the left, to wipe the blade. When you have them all done, then give them a light rub over with a dry towel, including handles, &c. Should you have silver knives, you may clean them with a little gin and whiting mixed together, and rubbed over the handles when dry; if the handles be fluted, you must brush them with your plate brush, and polish with your shamois, or, as it is pronounced, shammy leather.

My young friend, I have always been thus particular about my knives and forks, because they are things that, from the appearance of which, not only the lady and gentleman of the family, but every one that sits down at table, forms an opinion of the cleanliness and good management of the servant to whose care they are intrusted; and I sincerely wish that you may gain the same approbation.

Why are white hats and dresses worn in summer?

Because dark colors absorb most heat, white therefore, repels most heat, and is cooler wear. A white dress in winter is good, because it radiates or receives little heat. Polar animals have generally light furs. White horses are both less heated in the sun, and less chilled in winter, than those of darker hues.

The whole quantity of rain which has fallen, during the last 24 years, is 800,503 inches. The average of the 23 years, ending with 1832, was 36, 172 inches; the depth of rain which fell in 1833, was 48,520 inches.

BALTIMORE PRICES CURRENT.

From the Baltimore American, Feb. 25.

FLOUR.—The market continues excessively dull.—The wagon price of Howard street Flour has experienced a decline—most of the dealers receiving their supplies at \$4 50. We hear of no sales from stores except in trifling lots to bakers, for town use. There are no sales of City Mills Flour.

GRAIN.—For a parcel of good red wheat, all at today, 99 cents has been the highest offer made. Sales of prime white corn to-day for shipment, at 53 a bushel, and of yellow at 55 cents. A cargo of good oats was sold to-day at 35 cents. Cloverseed has declined a shade; sales of good have been made from stores at \$4 75, but that price can scarcely be realized to-day. The wagon price of good is \$4 25.

SEASONABLE ADVERTISEMENTS.

I am prepared to execute orders for GARDEN SEEDS in great variety, and of the best quality; all of new and free stock just opened. Also, TALL MEADOW OAT Grass Seed, of the growth of 1833, at \$2 50 per bushel.

RED TOP or HERDS Grass Seed ditto ditto at \$1 25. ENGLISH POTATO OATS, (weighing 14 lbs. per bushel,) at \$2 50.

LUCERNE, at 37½ cts. WHITE DUTCH CLOVER, at 37½ cts. Fine English LAWN GRASS at 25 cts. per quart. MORUS MULTICAULIS at 50 cts. each or \$5 00 per dozen.

BUFFALO BERRY trees, at \$1 00 each. GOOSEBERRY PLANTS of the finest varieties, with names, at 37½ cts. each, or \$4 00 per dozen.

RASPBERRY PLANTS of the true Antwerp variety, red and white, at 25 cts. each, or \$2 50 per dozen. Also, those of the common red kind, bearing very good fruit, 12½ cts. each, or \$1 00 per dozen, or \$6 25 per hundred.

CURRENTS, large red Dutch, at \$3 00 per dozen. GRAPE VINES in great variety, chiefly native or American kinds, viz: Isabella, Herbemont's Madeira, Catawba, and White Scuppernon, at 37½ cts. each, or \$3 per dozen.—Other kinds procured to order.

Cuttings in great variety at 50 cts. per dozen. DAHLIA ROOTS.—A few fine roots at 25 cts. to \$1 00 each; and seeds of the finest double varieties, at 50 cts. per hundred. Also,

FLOWER SEEDS in great variety.—Fifty kinds for \$2 25; and one hundred kinds for \$4 00.

And generally all articles in the seed line as usual.

I. I. HITCHCOCK,
American Farmer Establishment.

FRESH GARDEN SEEDS—NEW STOCK.

The subscriber has now completed the gathering together, from various sources, of a very extensive and complete assortment of GARDEN SEEDS, which he ventures to recommend to his customers and the public as good in every respect. He is prepared to execute orders either for dealers or families at the most reasonable rates at which *first rate articles* can be obtained.

AGENCY.—He also acts as agent for the procurement of CLOVERSEED and various GRASS SEEDS whenever he has them not in store; also Agricultural IMPLEMENTS, Fruit and Ornamental TREES, SHRUBS, GRAPEVINES, &c. Orders for these ought to be sent immediately, accompanied by either cash, or directions to draw for it when the articles are shipped. He also attends to the purchase and sale of CATTLE and other domestic animals.

I. I. HITCHCOCK.

WANTS A SITUATION.

A single man wants a situation as a farmer or manager to an estate, he is well acquainted with the various branches of farming, breeding and feeding of cattle and sheep, draining, ditching, &c. would prefer a situation where a large quantity of wheat can be raised.

For further information apply at this office.
Baltimore, January 21, 1834.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK.

FARMER'S REPOSITORY.

No. 16 Pratt st. between Ha. over and Charles street's.

The proprietor offers the following articles for sale, which he will warrant to be equal to any articles of the kind manufactured in the United States, and on as reasonable terms: viz: Gideon Davis's Improved Patent ploughs of all sizes, from a small 6 inch seed plough, to the largest size, three horse plough with wrought and cast shares, various sizes, of common bar-share and coulter ploughs, with the most approved mold boards—Freeborn and Hitchcock, (New York) ploughs, Cheezy's Improved Scottish ploughs, Crane's Pittsburg ploughs, and self-sharpening ploughs.

All repairs done at the shortest notice, and all kinds of plough castings kept constantly on hand for sale, also all kinds of machinery castings will be furnished to order from Messrs. Hammond and Duvall's Foundry, wheat fans of the most improved models—my patent Cylindrical Straw cutters, sizes 11 inch, 13 inch, 15 and 20 inch, this machine being my own invention which cost me much time and expense, great exertion will be used by me to maintain the high reputation it has gained—Fox and Borden's Spring Concave Threshing Machines, price \$80 exclusive of horse power—Amble's Hand Mill for Cracking Corn for stock, cash price \$20, common Dutch Cutting Boxes, and Evan's half patent Straw Cutters, Corn Shellers, Harrows, Cultivators, Swingle Trees, Trace Chains, Cradle and Grass Scythes, Grain Cradles, Cast Steel Axes, Patent Steel Hay and Manure Forks, Spades and Shovels, Picks, Mattocks, &c. It is his object to keep every useful implement for farming and gardening. And also a general assortment of Garden and Field Seeds.

Just received an assortment of the Messrs. Landreth's celebrated Garden Seeds, which are ready for delivery.

Orders will be received for Fruit Trees from the Nurseries of the Messrs. Landreth's, Samuel Reeve, and Samuel Gray, all of which have gained a high reputation in their profession. All orders will meet prompt and careful attention, and a discount made on cash sales for all farming utensils, and a very liberal discount to wholesale purchasers.

N. B. 70 doz. superior Scythe Snaths, at wholesale and retail.
J. S. EASTMAN.
Feb. 28.

A CARD.

I am well prepared to serve my customers and friends with all articles in the Seed, Implement, and Domestic Animal line—also with all kinds of trees, plants, &c. Orders should be sent immediately, and all those for Clover, and Grass Seeds, and for Implements, must be accompanied by the cash or an order to draw, on delivery of the articles.

I. I. HITCHCOCK.

NOTICE.

I will sell my farm on South river, at private sale. It contains upwards of a THOUSAND ACRES, and possesses more advantages than most farms. Any information which may be required will be afforded to those who will call upon me at my residence in this city, where I am always to be found.

RICHARD HARWOOD, of Thos.

Annapolis, Feb. 12, 1834.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January.

I. I. HITCHCOCK.

REDUCTION IN PRICES OF TREES, &c.

WILLIAM PRINCE & SONS, have determined, in consequence of the pecuniary pressure, to reduce the prices of a great variety of Trees and Plants, where orders are sent for a considerable amount, and all persons who desire Fruit and Ornamental Trees, Flowering Shrubs and Plants, Green-house Trees and Plants, splendid Dahlias or Seeds, will, on applying to them direct, by mail, with a list of the articles wanted, be promptly furnished, with a printed sheet explaining the reduced rates. The Chinese mulberry or Morus multiflorus, are now reduced to \$25 per hundred; and \$1 50 per dozen; Apple Trees in great variety \$20 to \$25 per hundred, Peas \$5 50 per hundred, and extra large do. 50 cents each, and fifty thousand are two, three and four years grafted; Peaches \$20 to \$25 per hundred; large Orange Quinces \$30 per hundred; English and Spanish Filberts \$25 per hundred; Gooseberries, finest Lancashire varieties, \$20 per hundred, and large Scotch varieties, \$18 per hundred; large red, white and black English Currants \$16 per hundred; Isabella Grapes, three years old vines \$25 per hundred; and two years do \$20 per hundred; Catawba, Alexander, Winne, York Claret, York Madeira and Scuppernon \$15 per hundred; Herbemont's Madeira, Troy and Elsinburg, \$30 per hundred; Norton's Virginia Seedling \$35 per hundred. The collection of choice European Grapes is unrivalled; Chinese Ailanthus four feet high \$4 50 per dozen, and larger size in proportion. A reduction is made on a great many kinds of Roses, Pæonies, Chrysanthemums, &c.; double Dahlias of such fine assorted kinds as have been most increased will be supplied at \$3, \$4 50 and \$6 per dozen, according to excellence, and selected by ourselves. The roots can be safely sent to any distance. The new varieties of Flemish and English pears having been early introduced by us, and greatly increased, the prices of the greater part have been reduced, and the trees are mostly of fine size and three years engrafted. The Ornamental Trees and Shrubs of most kinds are large and thrifty, and of double or treble the value of smaller ones, which is a most decided advantage, being a gain of several years in embellishment.

Linnæan Botanic Garden and Nurseries,
Flushing, Feb. 10, 1834.

2c.

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TERMS.

1. Price five dollars per annum: due at the middle of each year of subscription, provided that no balance of a former year remain unpaid.

2. The manner of payment which is preferable to any other for distant subscribers, is REMITTANCE BY MAIL OF CURRENT BANK NOTES; and to obviate all objection to this mode, the publisher assumes the risk.

3. Subscriptions are always charged BY THE YEAR, and never for a shorter term. When once sent to a subscriber, the paper will not be discontinued (except at the discretion of the publisher) without a special order, on receipt of which, a discontinuance will be entered, to take effect AT THE END of the current year of subscription.

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THE FARMER.

BALTIMORE, FRIDAY, MARCH 7, 1834.

TREATMENT OF LAND.

Margaretta, York Co.)
Feb. 26, 1834. }

MR. HITCHCOCK:

Dear Sir,—In the last number of the Farmer, a subscriber asks information respecting the treatment of land, &c. As the climate in which he resides, differs materially from that which I have been accustomed to, and as I am unacquainted with the rotation of crops, and mode of culture pursued in the South, I do not know whether any information I can give will be of service to him. But upon reading his communication, it occurred to me that if the corn crop succeeded the cotton, grass seed might be advantageously sown among the corn, after it had been worked the last time.

An experiment of this kind was made very successfully by a friend of mine, who sowed red clover among his corn after going through with the cultivator the last time, the seed was protected from the heat of the sun by the corn, it consequently vegetated very soon, and after the corn was cut off, there was a luxuriant growth of clover, which afforded fine pasture for several successive seasons. The red clover is an excellent manure, I have raised a fine crop of wheat, by ploughing in the second growth after harvest, it is probable it may not suit the climate or soil of your subscriber, if so there may be other grass more congenial to it, which would answer the same end.

Oats is a very great exhauster of the soil.

And, with regard to the straw cutter, I have had in use for four or five years, one of Eastman's Cylindrical Straw Cutters, which answers a very valuable purpose; and if those made by Sinclair & Moore, are of the same kind and equally well made, I could recommend them to any person having use for the article. Yours, &c. S.

CORN BREAD.

MR. HITCHCOCK:

Virginia, Feb. 21, 1834.

Sir,—As recipes for making different kinds of bread are occasionally published in the Farmer, perhaps it may not be deemed obtrusive in me to mention a way of making corn bread, which, if properly done, cannot fail to be highly esteemed.

Take one quart of corn flour, one half spoonful of lard, half a spoonful of salt, two spoonfuls of yeast, and warm water sufficient to make a batter that will drop freely out of the spoon. Set it in a pitcher or other vessel by the fire to keep moderately warm. It will become very light in eight or ten hours, and should be baked in a Dutch oven or spider, at the same time greasing the oven well. A cooking stove will answer equally well. The bread will be soft and spongy if properly managed, and greatly superior to what is termed pone. It should be served hot for breakfast or supper.

In order to have good bread it is very necessary to have good meal. It should not be ground too fine, for that will make the bread clammy and unwholesome. There is also great choice in the kind of corn. The best I have ever seen for family use, is what we call in Virginia *hominny corn*. The grain is white, very flinty and clear, sometimes almost transparent. It makes a richer bread than the softer varieties of the species.

IRRIGATION IN INDIA.

MR. HITCHCOCK:

Amongst my memoranda I find two notices, which relate to two of the greatest works in India, formed for the purpose of irrigation. If there is one circumstance more than another that contributed to the wonderful wealth of that country, it was this feature in its agriculture.

People accustomed to northern agriculture are not able to appreciate the wonder-working effects of this mode of multiplying the products of the earth. India is rapidly declining in civilization, and the memory of these works must soon perish. Although America is not sufficiently populous to undertake such, its march in power, and the rapidity with which it multiplies mankind and wealth, leads one to imagine that it will soon be in a condition to imitate every thing that the ancients have done for the welfare of mankind. One cannot help feeling great mortification that these works have been performed by a people which we have been in the habit of considering barbarous, while the more enlightened governments of modern times have allowed them to decay.

"The following anecdote does honor to the beneficent spirit of British sway. Having stated that the Persian governor of Khandahar, named Ali Mardan Khan, amassed a fortune so immense that it was supposed he possessed the philosopher's stone; Col. Frizelarence presumes that his wealth was accumulated by the formation of a canal, not for navigation, but for irrigating a sterile tract of ground between Pampat and Delhi.

"This noble canal was about one hundred miles from north to south; the water which flowed through it being taken from the Jumna, ninety miles above Delhi, and rejoining that river nine miles below the city. The natives call it Nehar Behisht, or the river of Paradise; sometimes the sea of fertility. The revenue of the country through which it flowed was fourteen lacs, but having been neglected and choked up for one hundred years, by the political convulsions so prevalent in this region, after the death of Aurangzebe, it does not now amount to more than one lac. Beyond its effects in Agriculture, it was of extraordinary consequence to the health of the inhabitants of Delhi. The water of the Jumna, and of the wells which they are now obliged to drink, is so much impregnated with natron, otherwise called soda, as to prove at times very injurious. The point of the river from which the canal is taken, is a great distance from that portion of the country in which the natron is so abundant, and there was a cut made from it to supply the city with wholesome water. There could not, therefore, be an act of more true beneficence than the restoration of this canal; and so it appeared to the present governor-general, who decided on the undertaking; and the work is now in actual operation, under the superintendence and direction of Lieutenant Rodney Blane, of the Bengal engineers, whom Lord Hastings selected for this duty, on account of the character he had acquired in the scientific pursuits of his profession. There is a fair prospect that the expense of this work will be compensated many fold, not only by the general improvement, but by the tolls taken for water which passes by sluices in the banks of the canal into innumerable channels to water the country on both sides, which will bring back the population and restore fertility to considerably above a million of acres."

The following is from Elphinston's Account of the Kingdom of Caubul:

"I have now enumerated all the products of husbandry in Afghanistan, of which I have information; but it is certain that I have made omissions, and it is by no means improbable that I may have overlooked some very common objects of cultivation. I shall now endeavor to explain the system of farming, by which the crops are raised; but the great importance of water to success in tillage, renders it necessary that I should first explain how that is obtained.

"The most general mode of irrigation is from streams; the water of which is sometimes merely turned upon the fields, but oftener is carried to them by little canals. It is diverted into those channels by dams, which, in small rivulets, cross the bed, and are swept away in the season when the water rises. In large rivers, a partial embankment is made on one

side, which extends for a certain distance into the current, and which, though it does not entirely interrupt the stream, yet forces a part of it into the canal. From the canal, smaller water-courses are drawn off to the fields, which are bounded by little banks raised on purpose to retain the water.

"The next contrivance for obtaining water is the sort of conduit which is called a *cauraiz* or *cahreez*. It is known by the same name in Persia; but is there more frequently called a *kaunaiz*. It is thus made: The spot where the water is to issue, must always be at the foot of a slope extending to a hill; and the ground must be examined, to ascertain whether there are springs, and in what direction they lie. When the spot is fixed, a very shallow well is sunk, and another of greater depth is made at some distance up the slope. A succession of wells is made in this manner, and connected by a subterraneous passage from well to well. The wells increase in depth as the ground ascends; but are so managed, that the passage which connects them has a declivity towards the plain. Many springs are discovered during this process, but the workman stops them up, that they may not interrupt his operations, until he has finished the last well, when he opens the springs; and the water rushes through the channel, rises in the wells to the height of its source, and is poured out from the lowest into a water-course, which conducts it over the fields. When the *cauraiz* is once completed, the wells are of no further use, except to allow a man to descend occasionally to clear out the channel. The distance between the wells varies from ten yards to one hundred. It is usually about fifty. The dimensions of the channel are generally no more than are necessary to allow the maker to work, but some are much larger. I have heard of a *cauraiz* near Subzewaur, in Persian Khorassan, through which a horseman might ride with his lance over his shoulder. The number of wells, and, consequently, the length of the *cauraiz*, depend on the number of springs met with, as the chain is generally continued, either till water enough has been obtained, or till the wells become so deep as to render it inconvenient to proceed. I have heard of various lengths, from two miles to thirty-six, but I should suppose the usual length was under the lowest of those measures.

"It may be supposed that the expense of so laborious a structure must be great, but the rich are fond of laying out their money on those means of bringing waste land into cultivation, and it is by no means uncommon for the poor to associate to make a *cauraiz*, and to divide the land which it irrigates among them.

"*Cauraizes* are very common in all the west of the country, and their numbers are on the increase. I know but of one on the east of the range of Solimaun, which is at Tutore in Damaun. They are in use over all Persia, as they have been in Toorkistaun, but they are now neglected in the latter country. Even their name is unknown in India."

Domestic silk handkerchiefs, the product of the native mulberry, have been manufactured in Dayton, Ohio, which are said to exceed the imported ones in durability, as three to one. The workmanship, which was superintended by Mr. Roe of that place, is highly creditable to him and the others connected with it; and the appearance is very pleasing, the article being of the natural color of the silk.

Recipe for Scarlet Fever.—A very simple remedy, says a correspondent, for this dreadful disorder, is now using in this city with good effect. It is merely a mixture of Cayenne pepper, salt and vinegar, used as a gargle.—N. Y. Com. Adv.

The Lynn Tribune recommends shoemaker's wax as an excellent remedy for the rheumatism. Put two or three pieces, about the size of the thumb, on the hollow of the foot, and the cure is certain.

* See his Journal of a route across India.

AGRICULTURE.

(From the Farmers' Register.)

ON THE USE OF MARINE MANURES.

Westmoreland Co. Va. Dec. 16, 1833.

It has often been to me a subject of surprise, that the various substances abounding on the shores of the Chesapeake and its tributaries, and which, for the want of a generic name, I shall class under the general head of *marine manures*, have attracted so little attention in Virginia. Whilst our more enterprising and industrious neighbors of Maryland, have by the liberal use of these means, been converting a barren and exhausted soil into fertile and productive fields, the farmers of Eastern Virginia, with the most abundant resources within their reach, seem to have been almost entirely ignorant of their value, or indifferent about their application. I deem it not amiss, therefore, to call the attention of the farmers on tidewater to the value of these resources, by communicating for your Register, though in a hasty and imperfect manner, my experiments and reflections on this interesting subject.

Under the head of *marine manures*, I shall embrace, in the order of their respective values, sea weed, (*Alga Marina*.) or sea ware, as it is called on the Eastern Shore of Maryland; Indian bank shells, oyster shell lime, and marsh mud.

About two years ago, finding it utterly vain to attempt to improve a large and exhausted farm, by the unaided resources of the stable and farm yard, I determined to look out for some other means of improvement. I accordingly commenced, on my Potomac farm, vigorous and extensive operations, with the marine manures of which I have spoken. I committed a fatal error, however, at the outset, in adhering to the ruinous three shift system, without the aid of artificial grasses; upon which, I verily believe, no great or permanent improvement can be effected, with any thing short of a mountain of stable manure, and hands and teams without limit, to apply it. It is true, that upon this system, by great attention, and the regular application of all the fertilizing means within the reach of our tidewater farms, crops may be considerably increased, and the land gradually improved; but let this great attention be in the least remitted, and the diminished returns of the farm will soon demonstrate the deterioration of the land. I have since adopted the four field rotation, with a standing pasture, and the extensive cultivation of clover; and I have no doubt I shall soon reap the reward of my labor, in the increase of my crops, and the permanent improvement of my land.

I soon found in the application of manures, that no great reliance could be placed on the occasional services of the farm hands and teams. I therefore detailed for that exclusive purpose a regular force, consisting of a man, a woman, and two small boys, just large enough to follow the carts, with two carts properly constructed, and an abundant supply of oxen. With this force exclusively devoted to collecting and carting out manure, I applied during the last year, upwards of five thousand loads. The whole annual expense, including estimated wages, wear and tear of carts, &c. may be fairly set down at \$250, making the manure cost about five cents a load. Yet few of our farmers can be convinced that they can spare time and labor for this essential operation.

My farm bordering more than a mile on the Potomac, affords a fine opportunity of collecting the *sea weed*; and my principal and most successful experiments have been with this valuable manure. For nine months in the year, from the 1st of August to the 1st of May, it is in great abundance, and my carts have usually carried out, according to circumstances, from fifteen to thirty loads a day. During the last year, I applied to various crops about three thousand loads of this manure, and with great effect

upon all. My first experiment was with corn. I applied it at the rate of about seventy loads to the acre, in the water furrows of a field intended for corn the next year, and *listet* upon it. The effect on the corn was immediate and powerful, doubling, I am confident, the crop on the poorest and lightest parts of the field, and greatly improving it wherever applied. I next applied it on a piece of very poor land, at the same rate, and fallowed for wheat, leaving in the middle of the lot a space of two acres, unmanured, which had previously been sowed, as an experiment, with cow-pas. The whole was put in wheat during the first week in September, 1832. The wheat on the manured land grew off beautifully, leaving far behind that on the other part of the lot. At Christmas it was exceedingly promising, but unfortunately having been sowed too early, the fly in the spring nearly destroyed it. During the same fall, I applied the *sea weed* as a top dressing to the poorest parts of my wheat and corn land; and in parts of the field I had it ploughed in with the wheat. Both applications produced most decided effects, the growth of wheat being thick and luxuriant on land which before this manuring was not considered capable of producing wheat at all. The fatal mildew, however, of the last summer, greatly injured the crop, although it did not affect those portions of the field, by any means as much, as other parts to which this manure had not been applied.

My next experiment was with oats, on which the effect of this manure was truly astonishing. I selected the poorest knoll in my field, bordering upon a small stream, along the side of which was a strip of land considered rich. I gave a liberal dressing to the knoll, and left the bottom unmanured, and fallowed during winter for oats, which were sowed in March at the rate of two bushels to the acre. When I prepared this piece of land for oats, an intelligent neighbor and friend of mine remarked to me, that if I succeeded in getting a crop from it, he would never afterwards doubt the efficacy of *sea weed*.

We visited the farm together, shortly before harvest, and he expressed the greatest astonishment at the growth of the oats. The line was distinctly visible which marked the extent of the manuring; the oats on the poor knoll being from six to twelve inches higher than those on the rich bottom. I verily believe I do not exaggerate, when I say that the oats were higher than *some* of the corn stalks of the crop preceding the manuring. I tried this manure also as a top dressing for oats followed by clover, with decided benefit on both crops. Its great efficacy in counteracting the effects of drought is very remarkable, and was strikingly exhibited in my field of corn during the excessive drought of last summer. The parts manured with *sea weed* continued green, long after the rest of the field had faded, and produced a tolerable crop, notwithstanding the great severity of the drought. I am now making an application of it, the operation of which I have yet to test. I am top dressing a field of clover sowed last spring, that I design to fallow for wheat next summer. I have been informed by an intelligent gentleman who witnessed the experiment in New Jersey, that good farmers in that state purchase this manure on the sea coast at 25 cents a load, and after carting it several miles into the interior, apply it with profit to their grass lands. I have little doubt that my experiment will be successful.

In an admirable treatise on agriculture in the New Edinburgh Encyclopedia,* (to which, if it has not already attracted your notice, I would beg leave to direct your attention, as furnishing many valuable extracts for your Register,) the opinion is expressed, that "in one respect *sea weed* is preferable to the rich-

est dung, because it does not produce such a quantity of weeds." I do not know whether its effect will be so permanent or not, but for a single crop, I hazard nothing in saying that in sufficient quantity it is equal to the best stable manure.

The wonderful effects of this manure are not to be attributed so much to the vegetable matter which it contains, as to the quantity of salts and animal muciilage intermixed it. It is doubtless this animal matter (consisting of sea nettles, young shell fish, and the spawn and *feces* of the finny tribe,) that produces so striking an effect on wheat on light lands. According to the writer in the Encyclopedia to whom I have referred, it has produced a wonderful effect on the sea coast of England, imparting to light lands sufficient tenacity to produce wheat and to resist *mildew*. I do not know what this manure would yield on analysis; but I think it probable a quantity of *gluten* would be afforded, which is essential to the growth of wheat; and this may account for the remarkable fact observed both here and in England, that it imparts to the lightest soils the capacity to bear heavy crops of wheat. You may find in the first vol. of the American Farmer, an interesting letter from Thomas Griffin, Esq. of Yorktown; and in the thirteenth vol. of the same work, a valuable communication from an Eastern Shore farmer, signed "Cornplanter," on the great virtues of this manure; the republication of these papers might possibly be of service by rousing the attention of some of our lethargic farmers, to the inestimable value of an article, heretofore regarded by them as a nuisance, being suffered to remain fermenting and putrefying on the shores, and infecting the atmosphere with the most fetid and pestilential odors.

Most of the farms on the Potomac, abound with banks of partially decomposed oyster shells, whether left there by the Indians, or brought to the surface by some great convulsion of nature, from the former bed of the river, I leave to geologists to determine. I have used these shells in considerable quantity, and with very manifest advantage. They do not act so promptly or so powerfully as the *sea weed*, but are probably more permanent in their effects. In combination with *sea weed* and other putrescent manures, they have all the effects of marl in giving permanency to the improvement. The late Mr. Ellison Currie of Lancaster, who was the most zealous farmer of my acquaintance, used these shells very extensively; and whenever I met with him, he expatiated with delight and enthusiasm on the great benefit derived from them. He used them, however, without a sufficient attention to artificial grasses, and probably without the application of a due portion of putrescent manures; and the consequence has been, as I have been informed since his death, that parts of his farm, now exhibit the appearances invariably produced by an overdose of calcareous matter, without a due application of putrescent and vegetable manures.

The value of oyster shell lime as a manure is so generally understood, and has lately been so well attested by the successful practices of Mr. Lewis, of Wyandotte, and other contributors to your Register, that I deem it unnecessary to say much on that subject. I have applied it to some extent, and with obvious advantage to wheat and clover: but having a great abundance of other materials much more accessible, I have not yet devoted much attention to lime. I am now, however, about to burn a quantity of shells, with the view of making a compost of old corn cobs, marsh mud, stable manure and lime, hoping in this way to derive some advantage from the corn cobs, which heretofore I have found it almost impossible to reduce to the food of plants. Under ordinary circumstances, I do not approve of expensive composts; but having all the necessary materials at hand, I shall form my compost during wet weather, when the fields will not bear carting over them, and when my manuring force could not be profitably employed about any thing else. In this way it will cost but little.

* By Robert Brown of Markle, (Scotland,) who was a judicious and successful practical farmer on a large scale, as well as an excellent writer on agriculture in general—two characters which unfortunately, are seldom found combined in the same person.—[Ed. F. R.]

I have made some experiments with *marsh mud*, which at first promised to be very successful, but I must confess that my expectations have been somewhat disappointed. To apply it, requires more labor, and that of a very disagreeable kind, than either bank shells or sea weed; and in my hands it has proved less efficacious than either of them. It is possible that I have committed some error in applying it, as I have been assured by a gentleman of high respectability, from the Eastern Shore of Virginia, who had used it extensively, that he would not exchange it, load for load, for the best stable manure. I entertain no doubt that when better materials are not to be had, it may be used with very great advantage.

The beds of fossil shells, in this country, denominated *marl*, may possibly be considered as belonging to the class of *marine manures*; as in all probability they are of marine origin. But the period of their connection with the sea is so remote, and the means by which they were transferred to their present positions, so indistinctly "known to our philosophy," that I have not thought proper to class them under this category. It is not however foreign to the purpose of this essay to say a few words on this interesting subject.

Your *Essay on Calcareous Manures*, and the articles in the Register on that subject, have excited great interest in the Northern Neck, as well as in other parts of the state. The subject is discussed in almost every company, and some of our practical farmers are already applying marl, and many others are in search of it. It is a very fortunate, and seemingly providential circumstance, that as soon as we leave the flat lands of the rivers and creeks, and come into the forest where *marine manures* are not to be had, marl is found in abundance. I have now in my possession several specimens, some of them uncommonly rich, found since the publication of your book, in different parts of the Northern Neck. You have just cause to be proud of having conferred so great and lasting a benefit on your country.

I cannot close this long, and I fear tedious communication, without expressing the confident opinion, that the cultivation of artificial grasses, particularly clover, is absolutely necessary to secure the full benefit of any system of manuring. I fully concur with your correspondent, Mr. Archer, of Fort Monroe, that in Eastern Virginia, we have committed a great error in supposing that our lands will not produce artificial grasses to advantage. My limited experience and observation entirely confirm the view so well expressed by him. It may be safely affirmed that there is not on the face of the globe, (possibly with the exception of China,) a highly improved and well cultivated country, in which artificial grasses are neglected. If China be an exception, the peculiar condition of that country, will afford the best reasons for the practices there adopted, whilst it should teach us the impossibility of following the example.

Whilst on the subject of grasses, I will inquire if the question, whether plaster will act in the vicinity of salt water, has yet been satisfactorily settled by the experience of practical farmers? I design to make some experiments with it in the spring, and may possibly send you the result of my observations.*

I hope sir, that you will receive this communication as an earnest of the zeal with which I desire to co-operate in the noble cause of agricultural improvement. I should be happy if I could bring to your

* We have no experimental knowledge of gypsum acting near salt water, but have fully proved its efficacy on soils, after marling, on which before, that manure was totally worthless; and its inertness even near fresh tidewater, has been generally attributed to the sea air. If our correspondent will try gypsum on clover where he has already applied his oyster bank manure in abundance—or if he can cause the like experiment to be made on some of the land injured by Mr. Currie's excessively heavy dressing, we entertain but little doubt of his success.—[Ed. Farm. Reg.]

service, any thing calculated to give effect to your labors. But I am well convinced, that neither my skill nor success as an agriculturist, give me the slightest claims to the confidence of the public as a teacher of the science. WILLOUGHBY NEWTON.

[The foregoing communication does not need our commendations to aid it in attracting attention; but we cannot repress our inclination to greet with welcome a new ally and efficient fellow laborer, in support of the most neglected and yet most improvable region of Virginia. Mr. Newton's facts (which are the more valuable, because failure is stated as well as success,) furnish the best of arguments to prove that no where else can soil be more cheaply fertilized, and no where are better profits offered to the judicious and economical farmer, than in the lower tidewater counties. Yet vast quantities of land, possessing in abundance either the "marine manures" described by Mr. Newton, or the richest beds of fossil shells, may be bought for prices varying from \$2 to \$4 the acre, although an enhancement of valuation (caused by late opinions of these advantages) has begun to affect selling prices. Our individual location is in a higher and less favored region, and therefore we are not misled by personal interest when we venture to predict that the counties on the salt water of Virginia will hereafter be the most valuable portion of the state.]

(From Goodsell's Genesee Farmer.)

MR. GOODSSELL. Ann Arbor, (M. T.) Jan. 7, 1834.

Sir.—In this county (Michigan) we are about commencing the culture of Barley; as I have never raised any of that grain, I beg your instruction on that subject. The few that have tried barley have met with different success; some have raised only twenty, while others have raised forty bushels per acre.

I am convinced there was but little difference in the quality of the soils, upon which these experiments have been made, and had they been planted with corn, the difference in the several crops would have been very little.

I do not understand adapting plants to soils, neither in the field nor garden, your direction on this subject would be acknowledged as a peculiar favor. About one half of my garden, which contains about three fourths of an acre, is sandy loam, the balance is what is called here, oak swail, the soil of which is approaching to muck. My farm is about equally divided between sandy loam, and clay loam, which by many is denominated *marl*. This soil when first ploughed, has a very light colored chalky appearance, and a superficial observer would take it to be a stiff clay, which however by a few days exposure to the sun, and air, crumbles into a very fine light soil, easily worked. This soil contains a great many small pebbles of different kinds of stone, and the color or it grows materially darker by tillage. Wheat grows finely upon this soil, but I have tried nothing else.

I would be glad to know, whether fall ploughing is necessary, to ensure a good crop of barley, the manner of tillage, time of sowing, quantity of seed per acre, &c. &c.

I am glad to learn that you intend commencing a series of numbers, on Agricultural Chemistry, which I think will be very interesting, more especially if you use terms, in conveying your ideas, that Farmers will readily understand. Chemical terms require much study, for instance, "siliceous earth" composed of silex, quartz, flint, &c. There is not one farmer in twenty, that knows, or will take the trouble to find or learn those things by chemical names. I think all those terms relating to Agricultural Chemistry, can be put in such familiar language, that farmers generally will understand them much better, than when those terms which are found in common works upon the subject are made use of.

Yours Respectfully, WM. ANDERSON.

BARLEY—*Hordeum L.*

Barley as a field crop, has been cultivated from

time immemorial. It is not known, of what country it is a native, nor at what time, it was first cultivated. At this time it is much more extensively cultivated in England than it is in this country. Few crops require more care in the cultivation, or are more apt to disappoint the cultivator in all the good wheat growing districts of the United States, than Barley.

There are six species of Barley at present cultivated in England, viz.

Spring or Summer Barley.—There are two varieties of this species, but the one commonly cultivated (*H. vulgare*) may be distinguished from the Siberian barley by the heads being much larger, and as well as beards arranged in double rows whereas the other is single, of which the heads appear flat. This is considered the best kind of barley for malting as the husk is light.

Winter Barley.—There are three kinds of winter barley which are at present cultivated for profit, besides two or three species and varieties that are cultivated as matters of curiosity.

The common or long eared Barley.—(*H. distichon*) is perhaps cultivated more than both the other species. Both heads, and awns, or beards, of this kind are much longer than those of other kinds of winter Barley. The heads of this kind are flat, and do not appear more than one half their width in thickness.

Square Winter Barley.—The heads of this kind of Barley, though not as long as the foregoing are much thicker and have the appearance of being square, the grains being arranged in four distinct rows. This accounted a harder species than the long eared and not as subject to be injured by the winter.

Big or Barley big.—This species has large square heads, with grains arranged in six rows and is cultivated on account of its being earlier than the common or square barley. It is not valued so high for malting as either of the other two varieties mentioned.

Soil and Climate.—Barley succeeds best in a cool damp climate, and there upon a fine warm sandy loam; but where the climate is warm, and dry, as in most of New York, a loose soil, rather moist than dry, produces the best crops.

The best crops of Barley grown in the State of New York, are upon a high range of table land on the North side of the Mohawk river near Fairfield. From the elevation of this range of land, it is too cool, to produce either corn, or wheat, unless when the seasons are unusually favorable, but it produces barley in great perfection.

In preparing lands for winter Barley, the course taken is the same as in preparing for wheat, and the sowing done in the same manner, but there should be twice as much seed sown upon an acre as of wheat.

Fresh stable manure should never be used upon land to be sown with barley, as it will generally be found to do more hurt than good. Lands for Barley should always, where the soil will allow of, be ploughed deep, and after seeding, the process should be finished with the roller. There is not a crop raised where the use of this implement is more important. By examining the plant, it will be seen at once, that it is not well calculated to stand the drought, as the roots are small and do not penetrate deep, and it has a great proportion, of broad, thin foliage.

Summer barley should be sown about the same time as oats, and lands capable of producing good crops of the one, will be found suitable for the other.

From the great quantity of foliage produced by winter barley, when sown early in the fall, in countries where the snows lie deep and long, it is found advantageous to feed it with calves or sheep previous to the setting in of winter, to prevent it from moulding.

Harvest Management.—There is more care required, in the management of this than any other

crop raised upon a farm. If cut too soon, it will be found very difficult to separate the awns, or beards, unless thrashed in a machine; if allowed to stand too long the ears are apt to break off, at the bend of the straw, near the head. If cut green, and suffered to remain upon the ground, to render the awns brittle, through rain storms, many of the grains will vegetate, which renders them of little worth for malting. Where farmers are provided with threshing machines the better way is to allow barley to stand until fully ripe, then cut it with a scythe, and let it remain upon the ground a day, or two, if the weather is favorable, then take it directly to the machine, and thresh and clean it.

The quantity of barley, produced per acre, is quite variable we have sown good lands, that did not produce more than twelve bushels, and we have seen upon lands, that were no better in quality, nor better prepared, crops that would average fifty bushels, much depending upon climate for its perfection. In England the average produce is allowed to be about twenty-eight bushels per acre.

From the uncertainty of the crop, barley is cultivated but little for any other purpose but making for beer. So that the market price will depend upon the distance at which the crop is raised from a brewing establishment.

In some parts of Europe barley is extensively used for making bread, but in this country where in most parts, a bushel of wheat may be raised as cheap as a bushel of barley, it is not likely to come into use as an article of food.

(From the Genesee Farmer.)

SEEDING LAND WITH GRASS SEED.

I have been surprised to see men, calling themselves farmers, leaving their fields unseeded with grass seed after wheat. The evils resulting from this practice are so obvious, that I should suppose every farmer of observation would discover them. If we do not sow grass seeds upon our lands when we design to let them lie unoccupied a year or two, rely upon it, *weeds will occupy the soil.*

Every farmer knows that a crop of grain takes from the soil a portion of its fertility, and that with the best management, it is nearly impossible to restore its wasted strength from the barn yard alone. But he has discovered that with the aid of grasses, he may not only restore, but increase, the fertility of his land.

There are very few farmers in this country more successful than the Germans of Seneca county; and their uniform practice is, to sow eight to twelve pounds of clover seed on their wheat, and then about one bushel plaster, which is renewed every year. After mowing or plastering a year or two a heavy crop of clover turned into the soil, and wheat again sown, which frequently produces thirty to forty bushels per acre. I have known that country more than twenty years, and am confident that this mode of farming has increased the fertility of the soil—that their crops of wheat are heavier than when I first visited it. But this is not all. Many of them sell clover seed annually to the amount of two hundred dollars.

Many suppose that land recovers its fertility by lying idle. I believe this to be a mistaken opinion; but suppose it is not, would it not be more to the interest of the farmer, that his fields should produce him two tons of hay per acre for a year or two, and then as heavy a crop of wheat as if they had received twenty loads of manure per acre? That they will do this, I can testify from my own experience. But, says the farmer, "clover seed is very expensive." It is true that it will cost about one dollar per acre; but if he receive in return ten times its cost in grass, and increased fertility of land, is he not the gainer?

I prefer sowing both timothy and clover. I sow per acre, one peck of timothy seed in autumn before

harrowing in my wheat the last time, and six to eight pounds of clover seed only in the spring, and find that this abundant seeding gives me better grass for pasture or hay, and more of it; and the ground being completely covered, the crop suffers less from drought. Light seeding is bad economy. If we sow lightly we shall gather lightly, and much of the ground being bare, the crop suffers severely from the influence of the sun.

It may be expected that I should say something of the different kinds of clover. I prefer the Pennsylvania, because it stands up better, will answer to sow thicker, and makes better hay. The large kind may be nearly equal as a manure, but it is not only more difficult to cut and cure, but when cured, cattle leave nearly all the coarse straw.

ONTARIO.

(From the Genesee Farmer.)

DUNGING IN THE HILL.

Dunging in the hill appears to us an injudicious method of applying manure, even when the quantity is small. It gives to the plant a luxuriant start, provided the manure is rotted, but too often proves of little value afterwards. It is mostly used in this way upon corn. If the manure is long, or dry, and dry weather ensues, it firebrands or does not rot, and the crop is little benefited; and for the next crop it benefits only parts of the soil where the corn has grown. The small fibres of the roots are the mouths of the plants through which the food passes to the stalk. If we examine the roots of corn we shall perceive that they extend as far in the ground as the stalks do above. Hence it will be perceived, that the dung, if placed in the hill, cannot benefit the roots, nor materially the plant, after they have extended beyond the circle where it is deposited. Whereas if it is spread and buried in the soil, it benefits them in their whole extent; there probably not being a square inch of ground in the field into which the roots do not penetrate in search of food. We would thank some of our readers to make an experiment, and communicate to us the result. Let half an acre have ten loads in the hole, and another half acre ten loads spread broadcast, and note the product of each in corn and the crop which follows it.

(From the New-England Farmer.)

MR. E. HERSEY DERRY'S CULTIVATION OF A PREMIUM CROP OF TURNIPS.

Salem, 28th Nov. 1833.

The Committee on Vegetable Crops:

GENTLEMEN,—I wish to be considered an applicant for the premium offered by the Society for the best crop of Turnips. My crop was raised this season as follows:—The piece of land contains two acres one quarter and seven poles, sloping a little towards the south; the upper part of the piece is a light gravelly soil, the lower part of the same a good rich loam. The crop taken from it in 1832 was Indian corn, potatoes and winter squashes, with a common allowance of manure. Late this spring it was ploughed and harrowed and allowed to remain in that state till we had finished our English haying. About the 20th July, we carted on to each acre, and spread as evenly as possible, about ten ox cart loads of old manure left of the preceding year, each load drawn by a single yoke of oxen. The land was then ploughed and harrowed, which covered the manure and the growth of weeds. The seed was sown on the 26th or 27th of July by a drill barrow, moved by a man walking at a quick pace in rows about two and a half feet apart. The seed was raised the present season by myself, the quantity sown on the whole piece did not exceed one and three quarter pounds, and was covered by passing the ox roller over the ground. There was a slight shower the morning we commenced sowing the seed, which gave the crop a fine start; and although my other crops suffered severely by the great drought we experienced about that time, the Turnips did not appear to suffer in the least. As

soon as they were in the rough leaf we passed between the rows with a light scarifier drawn by a horse, to loosen the ground and destroy the weeds. About a week or ten days afterwards the men went through them, thinned them out to single plants, and cut up what weeds they found with their hoes. Nothing more was done till we commenced taking them up on the 7th Nov. between that day and the 23d we carted to the barns as follows: Thirty ox cart loads topped in the field, and twelve and a quarter loads untopped. The men were directed to have every load of the topped ones filled as nearly alike as possible; one of them was sent to the public scales and weighed 2,525 lb. nett, which makes the thirty loads to weigh 75,750 lbs. or at 56 lbs. the bushel, as per the rule established by the Society, gives 1,352½ bushels. On the 23d, thinking it imprudent to risk the remainder of them any longer in the field, I directed the men to pull all that were then in the field, and cart them with their tops to the barn, on which day we carted twelve and one quarter ox cart loads, each one of which was filled as full as could be piled on. Topping these, and carefully measuring each load, they were found to measure 377½ bushels, which added to the others gives for the whole crop 1,730½ bushels. I expect to consume these turnips in feeding the different kinds of live stock on my farm the ensuing winter.

I am, gentlemen, with great respect,

Yours, &c.

E. HERSEY DERRY.

[Here follow the certificates proving the above statement according to the rules of the Society.]

DOMESTIC ANIMALS.

(From the Genesee Farmer.)

CATTLE.

In a recent number of the Farmer, your valuable correspondent, Ulmus, has again introduced the subject of CATTLE, with a concise account of the various improved breeds, which at present are held in high estimation among our most intelligent agriculturists. I regret that he has not entered more largely into the subject, and spread out before your readers the extensive knowledge which he has doubtless acquired in relation to the natural history, improvement and extension of the various breeds of Cattle, both in our own country and Great Britain. No branch of agricultural care and labor is of more importance, and none of greater interest, not only to the farmer, but to the community at large. While all classes participate in the luxuries of the dairy and the market, they must necessarily feel the slightest improvement or deterioration in the sources of these pleasures; and whatever therefore tends to disseminate knowledge among the people on subjects so important to their comfort and happiness, must excite a corresponding interest in the minds of all.

Among all your correspondents who have written on the subject of cattle, none seem to have thought it necessary to do more than *allude* to the existence of certain breeds, their qualities, their excellencies, their patrons, and their improvers, without going into their origin, history or extension, or the inducements which have led from time to time to their improvement. I must confess that I have formerly been subjected to great embarrassment, while conversing upon the subject of improved cattle, and while viewing some of the most beautiful specimens of these breeds, in not being able to retrace at once the history and improvement of cattle in our own country as well as England. The frequent inquiry, too, on the part of others, in relation to the origin of the several improved breeds, have been the source of some perplexity. The names of Devon, Hereford, Dishley, Darham, Holderness, and Alderney, are familiar to us all; but I venture to say, from my own experience and observation, that but few of the farmers in our country, and perhaps but a small portion of your readers, are acquainted

with the *origin* of these breeds, their *peculiarities*, their *distinctive qualities*, the *causes* which led to their improvement, or the *persons* to whom the world is indebted for the development of the natural and acquired properties of these valuable animals.

Without arrogating to myself any superior knowledge or merit, and in the absence of some more able correspondent, I propose in some measure to supply this defect, and to furnish the readers of the Farmer with the result of my own researches and reading on the subject, without pretending to *direct* or *advise* them in their selections. And I might here probably with much more truth and reason than Ulmus has done, plead the excuse of "*incompetency*" and want of ability.

I fully accord with the sentiment expressed by John Hare Powell, Esq. of Philadelphia, in a letter to Mr. Featherstonhaugh on this subject, that we are to receive with great caution the opinions of "flippant writers and half bred philosophers, who would teach without knowledge as they farm without land," while due deference should be had "to those patriotic, enlightened and liberal men, who by *præcise* detect error; by *science* expound theory; and by their generous exertions and zeal, elevate the importance and extend the influence of this most essential of all human arts." It is to men of this latter description we are to look for experimental knowledge on this as well as on other subjects, and in the remarks which I shall hereafter make, and in the views which I shall present, I shall rely more upon their experience and judgment than upon my own.

There is certainly a great diversity of opinion among our most intelligent and experienced agriculturists, on the subject of *improved cattle*, and it is far from being settled, that the introduction of any of the improved breeds into our country, will essentially change the acclimated character of our own cattle, or ultimately impart any benefit which does not arise from the selection and *improvement* of our present stock. The examples which Ulmus has given us of the diversity of sentiment on this subject, among some of our most distinguished stock breeders, will supersede the necessity of my illustrating these facts. All must agree, however, that great and paramount advantages are obtained by a careful attention to the form, habits and peculiarities of cattle, whether belonging to one breed or another; and that it is owing to the cultivation of these discriminating qualities, that we are enabled to arrive at any unusual excellence. But whatever preferences may exist in the minds of our agriculturists, or however reluctant they may be to admit innovations, it is certainly the part of wisdom to examine the claims of others, and to profit by their experience, whenever decided advantages are to be obtained. That we have the elements in our own herds of great improvements, and perhaps of surpassing excellence, no one can doubt; but whether it is better to reject the one hundred year's *experience* and *improvement* of our transatlantic brethren, for the privilege of wading through the same path of toil and perplexity, to arrive at the same result, is a matter worthy of consideration. To what expense, and toil, and care, and study, and perplexity, the breeding of cattle has subjected them, in endeavoring to improve the qualities of their stock, we shall see in the sequel; but whether after all, this labor and expense has resulted in any adequate remuneration, we shall then be able to determine.

The cattle of the United States are principally derived originally from England, though the Dutch and German settlers of the middle states introduced many of their own breeds at the time of their emigration. It is evident, however, that our cattle cannot differ essentially from those of England; and that we possess among us, to a greater or less extent, all their different native breeds. Whatever modes of treatment, whatever care in breeding, and whatever success in improvement may have occurred there, we

may then safely apply to this country, making due allowances for difference of climate and circumstances.

If we have in this country the original Devons, or Dishleys, or Holderness, or any other breed, or a compound of any or all of them, as we doubtless have, a careful attention to the history and management of the same breeds in England, will enable us at least to avoid their errors, and to adopt their experience and their improvements, in the perfection of our own. But if after a thorough investigation, we shall be satisfied that to improve upon the same originals, we must pass through the same channels of information, adopt the same or a similar mode of management, and that we shall in all probability arrive at the same conclusions, we shall then, too, be better prepared to adopt, at once, their improvements as the maximum of skill and science.

It is hardly worth while for our present purpose, to trace the ox from its original location in western Asia, to its naturalization on the soil of England; nor to extend our researches back to the time of Julius Caesar's invasion, simply to learn the fact that cattle then existed upon the several islands of Great Britain.

History furnishes no information on the subject, farther than the fact that various breeds of cattle, differing in form and color, have been reared in every part of the United Kingdom, from time immemorial, and that these cattle in their various modifications have been transmitted from one generation to another, to the present time. Within the last one hundred years, great researches have been made, and innumerable controversies have arisen in relation to the *original stock* of these various breeds, and though superior talent and extensive learning have been arrayed in the discussion, no satisfactory information has been elicited. The most that could be done was to classify the different breeds as they were found to exist in the different sections of the country, and to investigate, so far as practicable, their structure, habits and qualities.

It was soon found that one of the most distinguishing marks of the various breeds, was the length or shortness of the horns, and from thence arose a classification, having reference to great and important peculiarities, but distinguishable principally by the length of their horns. In some sections of the country, long and singularly shaped horns were the prevailing characteristics of *all* their cattle, though differing essentially in other particulars; while other localities were characterized by shorter and different shaped horns, gradually changing and diminishing according to circumstances and climate, to an entire *hornless* animal.

These different breeds were therefore arranged by most writers in the following classes: *Long Horns*, *Middle Horns*, *Short Horns*, *Crumpled Horns*, and the *Hornless* or *polled* breed.

The *Long Horns* were found to exist extensively throughout Ireland, and occasionally in the midland counties of England, but more particularly in Lancashire, and the west riding of Yorkshire. This is the breed that was so much improved by Mr. Bakewell of Dishley, in Leicestershire; and so far as England was concerned, seemed to originate in Lancashire or Craven. This breed, improved by Bakewell, is now more generally known as the "*Dishley breed*," from the name of the town where Mr. Bakewell resided.

The *Middle Horns*, supposed to be a distinct breed, and not derived from a mixture of either of the others, were extended more or less throughout England, Wales, Scotland and Ireland; but were found in greatest perfection and beauty in Devonshire, Herefordshire, Gloucestershire, and the lowlands of Wales. In all these sections of country, the distinguishing characteristic of *Middle Horns* was clearly preserved, though varying in size and quality according to climate and cultivation. In Devonshire, however, the breed seemed *naturally* to have obtained a higher ex-

cellence than elsewhere; and from the *improvement* of the breed as there found, has sprung the "*Improved Devons*," as now known.

The *Short Horns* were first noticed in the eastern part of Yorkshire, and the other northern counties, and are supposed to be either an accidental variety, or originally introduced from Holland or Denmark. Which ever may have been the fact, it is certain they have no claim to being distinguished as the *native stock*. Originally they were not held in much estimation; and it was not until after their cross with the Dutch cattle, in the vicinity of Durham, and along the banks of the river Tees, that they gained any celebrity. Their rapid improvement, however, in these localities, soon gave them the distinctive appellation of "*Teeswater*" and "*Durham Short Horns*;" and their approved excellence has more recently extended them throughout every part of the United Kingdom, and in a measure throughout the world.

The *Crumpled Horns*, or *Alderney*, as they are more generally called, is evidently an accidental variety, and found principally in small numbers along the southern coast of England, though they are highly esteemed by *gentlemen breeders*, not only in England, but in this country.

Polled or *hornless* cattle have existed from a very early period in the lowlands of Scotland, and the northern counties of England. They have therefore a much better claim to originality than the *Short Horns*, though it seems to be the opinion of most writers that they were also an accidental variety. Their history is traced to the remotest period of Scotch tradition, and from all the information which can now be obtained, there is no certainty in relation to their origin. The extinct kingdom or province of Galloway, however, seems to be the native district of this breed of cattle, and it is there that we now find them in their greatest purity. But as we shall have occasion hereafter to examine more in detail the history and peculiarity of this, as well as the other breeds, I will defer a farther description for the present.

The great controversy, in regard to the original breed of British cattle, has been between the *Long* and the *Middle Horns*. The other varieties are generally admitted to be either foreign or accidental; so that the entire power of argument and illustration has been exhausted upon these two breeds. The discussion of this subject seems to have elicited more talent and research than it really deserved; for it can be a matter of very little importance to any class of the present generation, whether the claims of one breed or the other to originality were established. From a variety of circumstances, however, the preponderance of evidence seems to be in favor of the *Middle Horns* having been the original native breed. But it is hardly worth our while to enter into an investigation of this matter, especially as so little of interest or profit is to be gained by it. We will therefore dismiss this part of the subject, and proceed to the more interesting examination of the different breeds, in reference to their qualities, peculiarities, and improvement.

This will embrace a wide field; and as the distinctive qualities of each breed, with its various modifications, will probably pass in review before us, it is desirable, before entering upon the discussion, to have a distinct idea of what constitutes *excellence* in cattle. There are certain qualifications which are universally admitted to be essential to the character of a perfect animal. In the ox, elegance and symmetry of figure; an early maturity or propensity to fatten; docility and speed in labor; a small consumption of food; and when slaughtered, a small proportion of offal compared with the marketable parts. In the cow, all these different qualities must exist, with the addition of superiority as milkers. But these are vague characteristics; and to arrive at a better understanding of the particular points which establish these excellencies, I will describe them more in detail.

"If there is one part of the frame, the form of which more than any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat and the lungs to play, or sufficient blood for the purposes of nutriment will not be circulated. We look, therefore, first of all, to the wide and deep girth about the heart and lungs. We must have both, for the grazier must have width as well as depth. And not only about the heart and lungs, but over the whole of the ribs must we have both length and roundness; the *hooped*, as well as the deep barrel is essential: there must be room for the capacious paunch, and room for the materials from which blood is to be provided. The beast should also be ribbed home; there should be little space between the ribs and the hips. This seems to be indispensable in the ox, as it regards a healthy constitution and a propensity to fatten; but a largeness and drooping of the belly is excusable in the cow, as it leaves room for the udder; and if it is also accompanied by swelling milk veins, it generally indicates her value in the dairy.

"This roundness and depth of the barrel, however, is most advantageous in proportion as it is found behind the point of the elbow, more than between the shoulders and legs; or low down between the legs, rather than upwards towards the withers; for it diminishes the heaviness before, and the comparative bulk of coarser parts of the animal, which is always a great consideration.

"The loins should be wide, and should extend far along the back, and the flanks should be round and deep. The hips should be large and round, rather than wide, and presenting when handled plenty of muscle and fat. The thighs should be full and long, close together when viewed from behind, and the further down they continue so the better. The legs short; for there is an almost inseparable connection between length of leg and lightness of carcass, and shortness of leg and propensity to fatten. The bones of the legs should be small, but not too small.

"Last of all, the hide (the most important thing of all) thin, but not so thin as to indicate that the animal can endure no hardship; moveable, but not too loose, and particularly well covered with fine and soft hair."

This is but a concise sketch of the desirable points of a fine animal; but it will be readily perceived that the breed which will most nearly combine and perpetuate these essential requisites, may be well considered the most valuable.

With these preliminaries, I shall in my next number enter upon the history, peculiarities, and improvement of the "Long Horns." QUERQUS.

ANIMAL WEATHER GLASS.

In Germany there will be found, in many country houses, an amusing application of zoological knowledge, for the purpose of prognosticating the weather. Two frogs are kept in a glass jar, about eighteen inches in height, and six in diameter, with the depth of three or four inches of water at the bottom, and a small ladder reaching to the top of the jar. On the approach of the dry weather, the frogs mount the ladder—but when wet weather is expected, they descend into the water. These animals are of a bright green.

ANIMAL LIFE.—The following is a scale of the average duration of animal life, from the most celebrated writers on natural history:—A hare will live ten years, a cat ten, a goat eight, an ox twenty, swine twenty-five, a pigeon eight, a turtle dove twenty-five, a raven one hundred, an eagle one hundred, a goose one hundred and fifty.

STAYS BY FRUITS are readily removed from clothes by wetting them, and placing them near lighted brimstone; a few matches will answer the purpose.

HORTICULTURE.

(From the New England Farmer.)

NEW IMPORTED PRODUCTS.

Linnæan Botanic Garden.

Flushing, Feb. 4, 1834.

MR. FESSENDEN:

Dear Sir—We send you a description of some of the new agricultural and horticultural products recently imported by us, extracted from London's Magazine.

The Hopetown Oat attains a greater height than any other cultivated variety; while, from the nature of the straw, it is not prone to lodge, and is much relished by cattle. It ripens early, yields fine grain, which is not apt to be shed by the wind, and so congenial are the habits of the plant to a dry soil and climate that an experienced farmer compared the potato and Hopetown oats growing under such circumstances in the same field, to a young person in the last stage of consumption, and one of the same age in rude health. Thus the Hopetown variety combines in itself all the valuable properties of the oat tribe, and seems admirably calculated either for the sun-scorched plains of the south, or the moist cattle-rearing districts of the west and north.

Taylor's Forty fold, or Crimson Nonsuch Potato—The former name is given them in consequence of their yielding forty times the weight of the quantity planted, each planting, which they have annually done for the last three seasons. They are beautifully white and uncommonly mealy, and are in perfection for use from the beginning of July to January.

Oxalis crenata, a culinary vegetable. "This plant is cultivated abundantly in the gardens about Lima as a salad, for which purpose its succulent stems and acid flavor seem strongly to recommend it. It grows freely in our open borders, is readily increased by cutting as well as by its tubers, which require to be taken up and preserved from frost in the manner potatoes are. The tubers are produced in considerable plenty, and are often two inches long, and an inch in diameter.—When raw they are slightly sub-acid; but on being boiled they lose this acidity entirely, and taste very much like the potato, for which they might form an agreeable substitute at the tables of the curious."

The following additional details, the result of further experiments, are from the pen of James Mitchell, Esq. under date of January 10th, 1833:

"I was one of a party where some tubers of this plant were cooked, by boiling for ten minutes, and they were on trial, declared by all present to be more agreeable in their flavor than the common potato. It is not possible to give an idea of the flavor in words; but if I were to attempt it, I should say it was that of the potato slightly combined with the chestnut. I have been informed that the tuber of the *oxalis crenata* was brought from South America by Mr. David Douglass, and was planted in 1831, by Mr. Lambert. One of the tubers obtained from Mr. Lambert was planted by Mr. Hirst in a pot in the green-house, in the end of April last, and in the month of May the pot was removed to the flower garden, and broken, and the parts removed. It was first planted in the green-house as a security against frost; but this appears to have been unnecessary, as the plant has stood the frost remarkably well, and the leaves on the 5th instant, before the tubers were dug up, were quite green. The tuber planted was less than an ounce in weight, and the tubers produced were more than ninety in number, and weighed altogether upwards of four pounds. They were in a space the diameter of which was nine inches and the depth six. The stems were between twenty and thirty in number, succulent, and of a reddish color. The flowers appeared in August, and consisted of five petals, crenate at the edge, and of a yellow color. The leaves are trifoliate; the leaflets are inversely heart-shaped.

"The experiment of cultivating this tuber may be considered as hitherto very successful, and when we

consider that the common potato was long confined to gardens, producing roots which were exceedingly small, and was far less promising than the *oxalis crenata* at present appears, we may reasonably anticipate that it may prove a valuable addition to our culinary vegetables, and that by skillful management the tubers may be greatly increased in size."

McEwan's Early Cabbage.—This variety of cabbage is earlier, by fourteen days, than any kind known in Europe. After being cut, the stocks should be allowed to remain in the ground, and they will produce from four to six heads, which will be fit for cutting by the time the Early York arrives at perfection.

We trust the acquisition of these desirable seeds and roots may be useful to the country at large.

Your most obtl. WM. PRINCE & SONS.

(From the Genesee Farmer.)

AMERICAN GRAPES.

Hammond's Port, Dec. 24, 1833.

As a very considerable variety of American grapes have of late been collected and brought into notice, possessing different degrees of merit, it is very desirable, for the satisfaction of those who may wish to select for their own cultivation, that their respective merits should be made known. Of a number of the best kinds, this has already been done; and some of them have already come into such general cultivation that they are well known; as the *Isabella*, *Catawba*, *Bland*, &c. The writer's knowledge of American grapes extends to but a few varieties. There is one, however, to whose excellencies he can bear testimony, but little known in this part of the state, but which has received a very favorable notice from the younger Mr. Prince, in a communication in the 4th number of the second volume of the *Genesee Farmer*. Until I saw that communication, I supposed the grape a foreign one; for I obtained it as such at a vineyard between Troy and Lansingburgh, composed entirely of this grape. It there went by the name of the *Black Hamburg*; and from the excellency of the fruit, its entire freedom from any foxy flavor, I supposed it was a foreign grape. The characteristic appearance, however, of the leaf and wood, which marks all our native varieties, shows it to be an American grape. Mr. Prince says, it "appears to him to approach the *Isabella* more nearly than any other variety that has met his notice." It however differs from it in several respects. The fruit is oval, like the *Isabella*; rather larger, I should think; a dark purple or black, with little or no pulp when thoroughly ripe; juice rich and sweet, with none of the peculiar musky flavor of the *Isabella*, which to some is unpleasant; ripens about the same time with the *Isabella*, is an abundant bearer, and on the whole a *very valuable* grape. What are its qualities for wine I know not, though I should think fully equal, if not superior to the *Alexander*. Mr. Prince calls it the *Troy grape*, and advertises it under this name in his catalogue. We should be glad to know something of its origin, how or by whom introduced into cultivation about Troy.

An amateur of the grape (a Mr. Gay of the Seneca Falls) informed me this fall, that he had a grape growing in his garden which he valued very highly, a *native of western New York*, which, from the location where he found it growing in its original wildness, he has named the "*Island grape*." If I recollect distinctly, he said he found it growing on an island at or near the junction of the Clyde with the Seneca river. He described it as a white grape, similar to the *Sweet Water* in size and appearance, of a fine flavor. From his description, I inferred it was not the common white fox grape. I am not aware that the white fox grape grows wild in the western part of our state. Mr. Gay would confer a favor upon the public, by giving, in the *Genesee Farmer*, a particular history and description of this grape; whether he considers it the same as the *New*

England white fox grape; its comparative merits with other well known grapes; time of ripening, &c. Especially as it is the product of our own part of the state, this description would be the more interesting.

W.W.B.

P.S. In a recent communication I have received from Mr. Prince, in answer to one in which inquiries were made relative to the Susquehanna grape, he says: "The whole tale about the Susquehanna grape is an *infamous humbug*. There is nothing *palliative* or *explanatory* that is based on *real facts*. We know so well the *characters* of foreign and native vines, that we would put *life almost* on the decision."

RURAL ECONOMY.

(From the Genesee Farmer.)

FENCE POSTS.

In a late number of the Farmer, I recommended the cultivation of the locust, believing it to be the most valuable timber for fence posts. Since I penned that article, I have reflected much on the subject, and have been led to the conclusion, that by the use of strong alkalies, several kinds of timber abounding in our country may be rendered durable in the ground.

An intelligent farmer of Cayuga county informed me, that when he entered on his farm, about thirty years ago, there stood on it a building which had been used as a potashery, and against which lay a large quantity of leached ashes. On removing it, within a few years, he found that one of the posts, on the side next the ashes, was of *basswood*, and, to use his own expression, as sound as when put in.

In building our fine packet ships, the spaces between the timber and ceiling and outer plank, are filled with salt, it having been ascertained that it has the effect to render the wood imperishable. In an article, page 91 of 1st vol. of the Farmer, it is stated that "the Shakers at Union village have been in the habit of making oak posts as durable as locust, by a very simple and easy process. This is merely to bore a hole in that part of the post, which will be just at the surface of the earth, with such a slope as will carry it just below the surface, and fill it with salt."

With the exception of the red cedar, which is found on the islands and shores of our lakes, we have no timber that will remain sound in the ground many years, unless measures are taken to neutralize the acid contained in the wood, in the part buried in the earth. It appears, by the above statements, that the ley of wood ashes, and salt, have that effect; and we have reason to believe that lime would answer the same purpose. But which will answer best can only be ascertained by experiment. Query—Does not the ley, salt, and lime, drive out and occupy the place of the natural moisture? I believe it to be a fact well established, that seasoned posts are more durable than green ones, and I conclude the reason is, that there is much less of the acid remaining.

I will now propose to the readers of the Farmer, that those of us who have leisure and opportunity, should make the following experiment: Procure sound oak, chestnut, or white cedar posts, and when they are well seasoned, divide them into three parts. Of that part to be put in the ground, let one-third be immersed in strong ley, one-third in a strong brine, and one-third in lime water, for a sufficient length of time to neutralize the acid. Or, if this be attended with too much trouble, set one third with leached ashes to within six inches of the surface, then strong ashes—let one-third have salt applied, as done by the Shakers, and the other third be set with lime from the surface to the depth of six inches, for it is at the surface of the ground that posts decay. By such an experiment, in addition to the benefit to ourselves, we should have the pleasing reflection that we have rendered one to the country at large.

I should be sorry if the above suggestions should divert the attention of any of our farmers from the cultivation of the locust, my only object in penning this being to inform them how to supply themselves with durable posts until their locusts shall have attained a proper size.

Several writers for the Farmer have asserted that posts last much longer if the end which was upwards when growing be put in the ground. I consider this worthy of further experiment.

ONTARIO.

RICE PORRIDGE.

The following method of cooking rice, more especially for the sick who may be confined to a vegetable diet, has been found very useful, and less liable to cloy the appetite than some other preparations. We believe it has not yet found its way into any book on cookery.

Take a wine glass full of rice, well picked and washed, and put it into a sauce pan with a pint of cold water. Boil it one hour or more. Pour it into a bowl, and add a table spoonful of cream, (with a little lump of butter for those who desire it,) and season it with salt.

MISCELLANEOUS.

AGRICULTURE.

"The efforts to extend the dominion of man over nature," says Bacon, the great master of philosophy "is the most healthy and most noble of all ambitions." This admirable sentiment is in nothing more true than in its application to agriculture. Here man exercises dominion over nature; exerts a power more nearly than any other resembling a creative power; commands the earth on which he treads to waken her mysterious energies; spreads fertility over barrenness; scatters the beauties and glories of the vegetable creation, where before all was desolate; compels the inanimate earth to teem with life; and to impart sustenance and power, health and happiness to the countless multitudes, who hang upon her breast and are dependant on her bounty.

Agriculture is the great interest of every community advanced beyond the savage state: I mean no invidious distinction. The interests of the social body are various; and in proportion to its improved condition its wants are multiplied to an indefinite extent. Many hands and many arts are necessary to erect, support, furnish, light up, adorn the grand superstructure of society, and supply the wants and provide for the entertainment of its innumerable and insatiate guests. The division of labor is one of the most important improvements of civilization, and one of the surest evidences of its advancement. It is essential to the perfection of the arts of life. The humblest occupations are important; and, if useful and honest, are respectable. He who labors with his mind, equally as he who labors with his hands, is a working man. The hardy ploughman who "joicund drives his team afield," and proudly strokes the smooth coats of his cattle, has no reason to envy the pale and emaciated scholar, poring till faint with exhaustion over the half formed progeny of his wearied brain; with eyes scarce open, hunting for metaphors by the expiring rays of his midnight lamp; and waiting so long with hope deferred for the gushes of inspiration, that when at last the waters are troubled he has not strength enough left to crawl to the fountain. In the crowded hive of human life, they who build the cell, as well as they "who gather the honey to store it well" are mutually useful and essential. But among the various occupations of society, agriculture obviously holds a commanding rank. If the prince may proudly say "I govern all," and the soldier "I fight for all," and the merchant "I pay all," the farmer may hold up his head as high as the rest, and with a noble self complacency may say, "I feed all."

What would become of the operatives, and of what use would be the curious and exquisite machinery of the largest establishment, if the power wheel should cease its revolution? Manufactures and commerce, all of science and all of art, all of intellectual as well as physical good, are dependant on agriculture. The agricultural products of one year are not more than sufficient for the consumption of the animal creation, until the succeeding harvest pours out its golden treasures. If the husbandman should remit his labors for a single season the human race must perish. What would philosophy do without bread? Without agriculture the thundering wheels and the buzzing spindles of the manufacturer must cease their gyrations. She too loads the buoyant arks of commerce, and bids them speed their flight to the remotest regions of the earth, and return deeply freighted with the treasures of foreign climes.

Agriculture as a profession begins to occupy the rank among us to which it has a just claim. Some of the most distinguished men in our own and other countries, in the present and past ages, men as eminent for intellectual and moral attainments, as for the station which they have occupied in public regard, and the part which they have performed in public affairs, have honored the profession and themselves by engaging even in its humblest labors and details; and have ingeniously confessed that they have found in its calm pursuits an inexhaustible source of interest and recreation, and a more grateful pleasure than the brilliant scenes of public life have afforded. The elements of true dignity of character are integrity, usefulness, activity, and intelligence. This beautiful valley, watered by the beneficent stream, whose name it bears, and fenced in by those magnificent highlands, which mark its progress to the ocean, presents in its farming population so many examples of this noble combination, that the profession of agriculture here, occupies a front rank among the most useful and respectable.—*Mr. Colman's Address.*

(From the House Servant's Directory.)

CLEANING PLATE WITH DRY PLATE POWDER.

This gives plate a most brilliant lustre, if it is only well done; and should be rubbed on with your naked hand, such as spoons, forks, and dessert knives that have silver blades. These small articles are cleaned by taking some of the powder between your finger and thumb, and the longer you rub, the better it will look; any article of your plate that is ornamented, this part may be rubbed with a piece of leather dipped in the plate powder, and rubbed quick and hard; then it should be brushed with your plate brushes, and polished off with your shammy or wash leather; and I will warrant your plate to look beautiful.

In the next place you must remember to keep your plate in a dry place, for if you let any articles that are only plated, lay about dirty, or in a damp place, they are sure to rust if plated on steel; and if plated on copper, they are sure to canker; therefore you should be particular, and not leave salt or acids of any kind on plated ware, as it is sure to take off the plate, and leave a stain, and by rubbing this stain, the plate will rub off; by which means the article is perfectly spoiled. I very well know that there are many articles of this kind, that are often spoiled through the neglect of servants, and especially young hands, that have had no experience of those things; therefore, my young friends, I have here given you such directions as I trust will enable you to keep your plate in such order as may give general satisfaction to your employers, and gain credit for yourselves.

BEEF CAKES.—Make fine some beef that is rare done, with a little fat bacon; season with pepper and salt, and otherwise as preferred; mix well and make into small cakes three inches long, and half as wide and thick, and fry them a light brown, and serve with gravy.—*Northern Farmer.*

BALTIMORE PRICES CURRENT.

Office of the American, March 4, 1 P. M.

FLOUR.—The market for Howard street flour is extremely dull. Sales of small lots only, from stores, at \$1.75. The wagon price is uniform at \$4.50 per bbl.

A lot of two of City Mills flour has been sold at \$4.62½, for cash. Two or three small lots of extra quality have been taken for baker's use in an adjacent city at \$5.25.

We have no sales of Susquehanna to report.

GRAIN.—A sale of very good Md. red Wheat was made to day at 91 cents. We quote the price of good corn for shipping, either white or yellow, at 50 cents. A sale of a small lot of Rye was made yesterday at 65 cents. The wagon price of good Clover seed is \$4.25; for a parcel of very prime, from wagons, \$4.37½ was paid to-day. Store price of good, about \$4.50.

SEASONABLE ADVERTISEMENT.

I am prepared to execute orders for GARDEN SEEDS in great variety, and of the best quality; all of new and fresh stock just opened. Also,

TALL MEADOW OAT Grass Seed, of the growth of 1833, at \$2 50 per bushel.

RED TOP or HERDS Grass Seed ditto ditto at \$1 25. ENGLISH POTATO OATS, (weighing 44 lbs. per bushel,) at \$2 50.

LUCERNE, at 37½ per lb.

WHITE DUTCH CLOVER, at 37½ cts. per lb.

Fine English LAWN GRASS at 25 cts. per quart.

MORUS MULTICAULIS, at 50 cts. each, or \$5 00 per dozen.

BUFFALO BERRY trees, at \$1 00 each.

GOOSEBERRY PLANTS of the finest varieties, with names, at 37½ cts. each, or \$4 00 per dozen.

RASPBERRY PLANTS of the true Antwerp variety, red and white, at 25 cts. each, or \$2 50 per dozen. Also, those of the common red kind, bearing very good fruit, 12½ cts. each, or 1 00 per dozen, or \$6 25 per hundred.

CURRENTS, large red Duteli, at 3 00 per dozen.

GRAPE VINES in great variety, chiefly native or American kinds, viz: Isabella, Herbemont's Madeira, Catawba, and White Seppernong, at 37½ cts. each, or \$3 per dozen.—Other kinds procured to order. Cuttings in great variety at 50 cts. per dozen.

DAHLIA ROOTS.—A few fine roots at 25 cts. to \$1 00 each; and seeds of the finest double varieties, at 50 cts. per hundred. Also,

FLOWER SEEDS in great variety.—Fifty kinds for 2 25; and one hundred kinds for \$4 00.

And generally all articles in the seed line as usual.

I. I. HITCHCOCK,

American Farmer Establishment.

BARTRAM BOTANIC GARDEN AND NURSERY.

The subscriber has now for sale, (at reduced prices,) at the above well known Nursery, a large collection of the finest

Fruit Trees of all sorts.

Ornamental Trees, of large sizes.

Flowering shrubs and plants.

Green house and Window plants, &c. &c.

Orders, per mail, addressed to the Post Office King-stressing, or left at the store No. 11, Philadelphia Arcade, will be promptly attended to, and plants packed in such a manner as to insure their safe transportation to any part of the United States.

When desired, competent persons will be procured to plant out shade trees, and the boxes furnished to any pattern.

ROBERT CARR.

The Philadelphia and Darby Omnibus, passes near the Garden every two hours.

BLACK SEA SPRING WHEAT.

On page 369 of this volume of the Amer. Farm. there is a description of the above named wheat. I have obtained about a bushel of it, which I offer to the curious in such things, at 25 cents per quart.

I. I. HITCHCOCK,

American Farmer Establishment.

MAJOR JACK DOWNING.

This bull, 15 months old, seven-eighths Durham Shorthorn, may be had for \$100, from

I. I. HITCHCOCK.

FARMER'S REPOSITORY,

No. 36 Pratt st. between Hanover and Charles streets.

The proprietor offers the following articles for sale, which he will warrant to be equal to any articles of the kind manufactured in the United States, and on as reasonable terms, viz: Gideon Davis's Improved Patent ploughs of all sizes, from a small 6 inch seed plough, to the largest size, three horse plough with wrought and cast shares, various sizes, of common barshare and coulter ploughs, with the most approved mold boards—Freeborn and Hitchcock, (New York) ploughs, Cleazy's Improved Scottish ploughs, Crane's Pittsburg ploughs, and self-sharpening ploughs.

All repairs done at the shortest notice, and all kinds of plough castings kept constantly on hand for sale, also all kinds of machinery castings will be furnished to order from Messrs. Hammond and Duvall's Foundry, wheat fans of the most improved models—my patent Cylindrical Straw cutters, sizes 11 inch, 13 inch, 15 and 20 inch, this machine being my own invention which cost me much time and expense, great exertion will be used by me to maintain the high reputation it has gained—Fox and Borland's Spring Concave Threshing Machines, price \$80 exclusive of horse power—Amblers's Hand Mill for Cracking Corn for stock, cash price \$20, common Dutch Cutting Boxes, and Evan's half patent Straw Cutters, Corn Shellers, Harrows, Cultivators, Swingle Trees, Trace Chains, Cradle and Grass Seythes, Grain Cradles, Cast Steel Axes, Patent Steel Hay and Manure Forks, Spades and Shovels, Picks, Mattocks, &c. It is his object to keep every useful implement for farming and gardening. And also a general assortment of Garden and Field Seeds.

Just received an assortment of the Messrs. Landreth's celebrated Garden Seeds, which are ready for delivery.

Orders will be received for Fruit Trees from the Nurseries of the Messrs. Landreth's, Samuel Reeve, and Samuel Gray, all of which have gained a high reputation in their profession. All orders will meet prompt and careful attention, and a discount made on cash sales for all farming utensils, and a very liberal discount to wholesale purchasers.

N. B. 70 doz. superior Seythe Snaths, at wholesale and retail. J. S. EASTMAN.
Feb. 28.

A CARD.

I am well prepared to serve my customers and friends with all articles in the Seed, Implement, and Domestic Animal line—also with all kinds of trees, plants, &c. Orders should be sent immediately, and all those for Clover, and Grass Seeds, and for Implements, must be accompanied by the cash or an order to draw, on delivery of the articles. I. I. HITCHCOCK.

NOTICE.

I will sell my farm on South river, at private sale. It contains upwards of a THOUSAND ACRES, and possesses more advantages than most farms. Any information which may be required will be afforded to those who will call upon me at my residence in this city, where I am always to be found.

RICHARD HARWOOD, of Thos.

Annapolis, Feb. 12, 1834.

FRUIT TREES.

All orders for Fruit Trees, will be executed with exactness and promptitude, at this Establishment.

We have no nursery of our own yet forward enough to sell from, but, we think we know where to get trees that may be relied on, and also, where to not get them. We charge ten per cent. commission on the amount of orders, at the nursery prices. This is the season for transplanting, and we remind our customers and friends, that we are ready to serve them.

I. I. HITCHCOCK,

American Farmer Establishment.

POINTER PUPPIES.

I have for sale, four male and three female Pointer Puppies littered 22d November, they are of the very best blood, and are all most beautifully formed, and marked, being white with liver spots. Price \$10 each, deliverable as soon as they shall be weaned, say 10th of January. I. I. HITCHCOCK.

REDUCTION IN PRICES OF TREES, &c.

WILLIAM PRINCE & SONS, have determined, in consequence of the pecuniary pressure, to reduce the prices of a great variety of Trees and Plants, where orders are sent for a considerable amount, and all persons who desire Fruit and Ornamental Trees, Flowering Shrubs and Plants, Green-house Trees and Plants, splendid Dahlias or Seeds, will, on applying to them direct, by mail, with a list of the articles wanted, be promptly furnished, with a printed sheet explaining the reduced rates. The Chinese mulberry or Morns multicaulis, are now reduced to \$25 per hundred; and \$4 50 per dozen; Apple Trees in great variety \$20 to \$25 per hundred, Pears \$37 50 per hundred, and extra large do. 50 cents each, and fifty thousand are two, three and four years grafted; Peaches \$20 to \$25 per hundred; large Orange Quinces \$30 per hundred; English and Spanish Filberts \$25 per hundred; Gooseberries, finest Lancashire varieties, \$20 per hundred, and large Scotch varieties, \$18 per hundred; large red, white and black English Currants \$16 per hundred; Isabella Grapes, three years old vines \$25 per hundred; and two years do \$20 per hundred; Catawba, Alexander, Wiune, York Claret, York Madeira and Seppernong \$25 per hundred; Herbemont's Madeira, Troy and Elsinburg, \$30 per hundred; Norton's Virginia Seedling \$35 per hundred. The collection of choice European Grapes is unrivalled; Chinese Ailanthus four feet high \$4 50 per dozen, and larger size in proportion. A reduction is made on a great many kinds of Roses, Pæonies, Chrysanthemums, &c.; double Dahlias of such fine assorted kinds as have been most increased will be supplied at \$3, \$4 50 and \$6 per dozen, according to excellence, and selected by ourselves. The roots can be safely sent to any distance. The new varieties of Flemish and English pears having been early introduced by us, and greatly increased, the prices of the greater part have been reduced, and the trees are mostly of fine size and three years engrafted. The Ornamental Trees and Shrubs of most kinds are large and thrifty, and of double or treble the value of smaller ones, which is a most decided advantage, being a gain of several years in embellishment.

Linnaean Botanic Garden and Nurseries,
Flushing, Feb. 10, 1834.

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